

# Accelerating Adolescent Literacy

A Report from Iowa's  
Adolescent Literacy Research  
and Development Team



*Accelerating Adolescent Literacy: A Report from Iowa's Adolescent Literacy Research and Development Team*

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Edited by the AVS Group and the Iowa Department of Education

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Research and Development Team*



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# Part One

## ***Introduction***

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As a group, Iowa students continue to perform above the national mean on the *Iowa Tests of Basic Skills (ITBS)* and the *Iowa Tests of Educational Development (ITED)*. Iowa students who take the ACT Reading Test, usually around two-thirds of each graduating class, generally score one or two points higher (on a 36-point scale) than their national counterparts (Iowa Department of Education, 2006). And, Iowa State University continues to enroll more National Merit Scholars than other universities in the United States.

However, on the 2002 *National Assessment of Educational Progress*, 40% of the fourth grade females who took the test obtained proficient or higher scores while only 14% of the males did (U.S. Department of Education, 2002). 69% of fourth grade students scored above the 50<sup>th</sup> percentile on the 2005 *ITBS*, while 61% of eighth and eleventh grade students performed above the 50<sup>th</sup> percentile on the *ITBS* and *ITED*. Student results in reading comprehension have remained basically flat in grades eight and eleven from 2001 through 2006. In 2004 in Iowa, 8,788 males were awarded bachelor's degrees, in comparison to 11,386 females.

At the national level, almost seven thousand students drop out of high school every day, due in part to the fact that they do not have the necessary literacy skills to keep up with the demands of the work they face in the schools they attend (Achieve, 2005; ACT, 2006; Alliance for Excellent Education, 2006; Biancarosa & Snow, 2004; Kamil, 2003). While these students are dropping out of the educational system, the average literacy required for U.S. occupations is rising rapidly. The 25 fastest growing occupations have far greater literacy demands than the 25 fastest declining occupations (Biancarosa & Snow, 2004). While Iowa's student performance is above that of most states, many Iowa educators and citizens are



concerned about the literacy performance of students and their readiness to cope with and be successful in their lives beyond elementary and high school.

In an effort to address the needs of adolescents in Iowa, the Department of Education organized an Adolescent Literacy Research and Development Team (ALRDT) whose goals were threefold:

1. To form a cadre of people who would serve as a knowledgeable resource to area education agencies (AEA) and local education agencies (LEA)
2. To develop a proposed plan for building capacity statewide to improve adolescent literacy
3. To identify potential resource materials needed to support the capacity building efforts

A 40-member team was charged with studying the literature and research base and developing a proposed plan of action. The team consisted of representatives of the Iowa Department of Education, AEA consultants and a media specialist, LEA personnel including central office, principals of rural and urban middle and high schools, a teacher, a literacy strategist, and an external consultant who served as the facilitator for the group. The members' educational experience ranged from seven to 37 years with an average of 16 years of experience. All had been employed an average of three years in their current position. Each member held a minimum of a master's degree.

Meeting for 14 days between June 2006 and June 2007, the ALRDT engaged in a structured inquiry around adolescent literacy and the literacy achievement of middle and high school students. They studied and analyzed national, state, and local school/district data and conducted interviews with educational personnel in 36 middle and high schools in 23 districts. They worked to determine the present status of adolescent literacy in Iowa, how data were being used in schools, what concerns middle and high school faculty members had, and the nature of professional development that supports teachers in developing literacy in the content areas.

One of the first tasks of the ALRDT was to define literacy.

Literacy is the ability to read, write, speak, listen, view and think effectively. It enables adolescents (students in grades four through twelve) to learn and communicate clearly about what they know and what they need to know. Being literate enables students to become informed, to inform others, and to make informed decisions. Because literacy is fundamental to teaching and learning, support

for literacy development at the secondary level is one of the major keys to student success in the classroom and beyond. (Modified from Meltzer, Smith, & Clark, 2002).

Definitions of literacy often go beyond the abilities to read, write, listen, and speak, to include the abilities to communicate and reason, which implies some degree of understanding. *Communication* occurs when the reader understands the information the writer intended to convey. This comprehension challenge faces teachers in all disciplines since much of the knowledge of the content area disciplines is transmitted through textbooks, journals, internet sources, and other print resources.

Working individually and collectively, team members engaged in a group investigation of the current status of literacy achievement as well as a deep study of the research supporting effective practices in adolescent literacy. The research was conducted in the following areas:

1. Access to print
2. Reading volume
3. Motivation and engagement
4. Fluency
5. Vocabulary
6. Reading comprehension
7. Discussion
8. Learning to write and writing to learn

The group studied research articles and syntheses about how to meet the needs of special populations and reviewed the components of structured school improvement, especially professional development.

Their investigations resulted in recommendations for and development of separate written documents for each literacy strand, this report (which includes how the work was done as well as all the strands emphasized), and a professional development series. Part One of the Adolescent Literacy Professional Development Series was completed by the end of 2007 and is to be used by AEA consultants, school central office staff, and school leadership teams in supporting their study of adolescent literacy. The written documents represent a synthesis of the key findings and best practices in each of the areas of investigation mentioned above. And, the multi-part professional development series provides session outlines and material resources for use with school faculties ready to move forward.



As the ALRDT engaged in developing a proposed plan to build capacity statewide in adolescent literacy (one of the goals of the group), the following principles were established:

1. Link recommendations to current curriculum, instruction, and school improvement efforts
2. Follow the Iowa Professional Development Model (IPDM)
3. Establish and include structured school improvement components
4. Focus on depth, not just breadth of content
5. Emphasize the importance of the role of the teacher/librarian
6. Insure that the recommendations can be pursued by any willing faculty
7. Recommend plans for school-wide efforts involving **all** teachers in improving adolescent literacy for **all** students across **all** disciplines

This report is intended to serve multiple purposes: it provides various stakeholders such as legislators, state and local leaders, school board members, school administrators, area education agencies, and local education agencies with the rationale for convening the team; it states the goals and outcomes of the group; and it presents a synthesis of the research related to adolescent literacy and recommended actions. The report is organized to allow stakeholders to study individual sections or the full report as they make determinations about where to begin their own inquiries and actions in accelerating adolescent literacy.

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## Part One

### ***Accelerating Literacy for All Students— What Are the Goals?***

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In this section, we provide a brief overview of knowledge, performance, and attitudinal goals identified by team members and by secondary educators who were interviewed. Members of the Adolescent Literacy Research and Development Team (ALRDT) also reviewed documents such as Iowa's *Core Curriculum* (Iowa Department of Education [IDE], 2006), textbooks in use in the secondary schools, and test items and descriptions from the *Iowa Tests of Basic Skills (ITBS)*, the *Iowa Tests of Educational Development (ITED)*, *ACT*, and the *National Assessment of Educational Progress (NAEP)* in Reading and Writing. As they conducted these reviews, team members identified and discussed the knowledge, skills, and strategies needed by students if they were to successfully engage with these materials.

The big inquiry question for the team was “How to accelerate adolescent literacy?” In one of the early activities of this inquiry, team members were asked to describe the characteristics of a highly literate person. This activity and its results helped the group form a description of the actions and dispositions educators want students to develop through curriculum and instruction in literacy. From this discussion, the following common characteristics of a literate person emerged:

- An avid reader of a wide range of materials
- Someone who is passionate about learning, inquisitive, thoughtful, and reflective
- Promotes reading through sharing
- Is an articulate speaker and writer
- Has a vast receptive and expressive vocabulary
- Able to use personal experience and knowledge gained through reading and discussion as she or he interacts with others
- Uses reading, writing, and speaking to deepen understanding

Between July and December 2006, team members also interviewed 198 middle and high school faculty members to gather their ideas about student and staff goals. Interviews were conducted in 36 schools in 23 school districts with 44 middle school teachers, 65 high school teachers, 29 guidance counselors, 24 teacher librarians, 15 middle school principals, and 20 high school principals. (See Appendix for a sample interview form used with one of the role groups.)

Interview respondents were asked to identify two to three big ideas, competencies, or skills that they wanted students to gain or develop prior to graduation. The top three ideas from each group are identified below:

- Middle school teachers—good comprehension, skill in thinking, extensive vocabulary
- High school teachers—good communication skills (especially the ability to read, write, and speak effectively), reading comprehension skills, and problem solving skills
- Guidance counselors—good communication skills, reading comprehension, and problem solving skills
- Teacher/librarians—information literacy, curiosity, love of reading and learning
- Middle school principals—ability to read at or above grade level; comprehension skills; responsible, confident, and hard working
- High school principals—critical thinking and problem solving skills, good communication skills, life-long learners

Team members studied the *Core Curriculum for Iowa High Schools* (IDE, 2006), a sample of secondary textbooks, and the most common assessments and their results. They also took examination items from *NAEP* and *ACT*, then analyzed the knowledge, skills, and strategies needed for success in using textbook materials and scoring well on the tests. Knowledge essentials included a broad vocabulary; understanding of how to read pamphlets, maps, and other informational literacy documents; an understanding of text structure and style of both fiction and nonfiction text; and knowledge of how to analyze critical components of questions. Some of the most common essential skills identified included writing in a cohesive manner and the ability to quickly re-read, predict, and assimilate information. And some of the most common essential strategies were skimming and scanning, locating information quickly, summarizing, inferring, drawing conclusions, visualizing, and using supporting information. After experiencing the test items themselves and reading segments of the textbooks, some team members identified time management and the ability to organize, prioritize, and compose fluidly as critical attributes for successful engagement with these materials.

From their study of the knowledge base as well as the analysis and

discussions summarized above, the ALRDT identified the following literacy performance goals for students:

1. Become avid readers who read for a wide variety of purposes and are inquisitive, thoughtful, and reflective
2. Use comprehension strategies and skills to understand a wide range of both fiction and nonfiction materials, including informational literacy
3. Use critical thinking and problem solving skills
4. Demonstrate vocabulary knowledge in speaking and writing
5. Communicate articulately and effectively when speaking and writing
6. Use discussion and writing as tools to support learning

Some indicators that stakeholders could use to determine increases in literacy include improved performance on the *ITBS*, *ITED*, *ACT*, and *NAEP*. The team especially recommends looking beyond the mean scores to the movement of the whole distribution toward higher performance.

The following attitudinal goals were identified by the ALRDT from studying the interview data. Educators interviewed mentioned these items frequently:

1. A life-long love of learning
2. Persistence in task completion
3. Positive habits of mind and willingness to work with others
4. Positive attitudes toward reading and writing

Some indicators that would demonstrate movement toward meeting these goals include but are not limited to:

1. increased circulation in school and public libraries
2. increased time spent reading by students
3. increased discussions regarding reading and writing
4. lower drop-out rates
5. fewer discipline referrals

(Many others could be added depending on one's community and school goals.)

The voice least represented here is that of students. Team members were not asked to interview or survey students for their goals and what they most wanted as a result of their time in grades four through twelve or their work in middle and high schools. However, local schools may well want to survey their secondary students or interview a sample in order to identify student-expressed priorities and concerns. It will be very difficult for any of the goals expressed above to be achieved without the full participation of students.

## **References**

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## ***Appendix***

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Completed Individual Interview Form for Teachers: 2006

Individual Interview Form for Teachers: 2006

School: Sample

Name of Teacher: \_\_\_\_\_

Gender: male female

Years of Experience:

As an Educator	9
In this Role/Position	5
Teaching in this School	5
Highest Degree Conferred	BA +6

Certifications Held:

7-12 World History, 7-12 American History, K-12 Coaching

Current Courses Being Taught/Other Major Responsibilities:

9th Grade World Cultures, 10-12 Western Civilization, Coach 9th grade Football, Jr. H. Boys' Track

1. What data do the faculty as a group use—and when and how do they use these data—to inform everyone about the student population and about students' progress as learners? (If the interviewee does not mention any literacy data, ask if he or she can recall any data on reading or writing that the faculty reviewed last year or this year.)

*We use MAP's reading information to give us a guide as to where the students' reading ability is.*

*IEPs in my role this year as a coop teacher—co-teaching with Special Ed.*

*We use pre- and post-tests—more as a guide into the material that needs to be covered. Report cards, grade sheets, basic, traditional conversations with other staff members, students themselves—face-to-face with the students and their parents, sometimes crisis teams.*

2. What kinds of information, materials, and data do you use in planning lessons and units?

*I try to take into account all learning throughout the unit. It doesn't mean that each lesson is designed to every learner, but every unit tries to hit on all types of learners. Some kids are better at some things than others, and I want to have multiple approaches so that I can reach multiple students. When I find something that works, I can adapt to that individual's learning style.*

3. In your estimation, what percentage of your students can read fluently and comprehend the materials that are part of your courses? How do you figure this out? What supports are there for students who are struggling readers?

*Some days none and sometimes more (95%). But for the most part you have that 30% of students that get it all the time, 20% that get it some of the time, 5% that don't ever get it. My perception might be skewed because of low SES, language barriers; there are a lot of factors that I have to consider when I think about this.*

*I figure it out by observing, talking with the student, developing a relationship with the students. The methods I use is that I use a lot of graphic organizers. I use cloze tests with the words in the books where they can get the words that are left out. I have some that use highlighter tape. The Kurzwell is used in resource room. A lot of restating, explaining, relating to their world as it is today.*

4. What is your greatest concern when you think about student achievement and performance in your school?

*I think we do a pretty good job of reaching the low SES and lower performing students with all the methods we have been trained in. My concern is for the higher learners. There are not enough opportunities for them to be challenged, for them to be successful at their level. It's not dumbing-down the curriculum, but it's closing the gap. But we need to give them more opportunities. Giving them more opportunities will help to pull the entire population up and have them become more successful.*

5. Are there subgroups you are concerned about? (Populations the faculty have greater difficulty supporting.)

*TAG kids—they are challenged individually, but in class?*

*I personally think we are doing a good job and I personally don't think of kids in groups. I make a conscious effort to help all. Every group has all levels. I think our accommodations are excellent. ELL is excellent. We try to accommodate everyone into our learning culture.*

6. What are two or three big ideas, competencies, or skills you want students to gain or develop in your \_\_\_\_\_ course? (The interviewee may identify one or several courses.)

*My major focus is to develop a work ethic. I firmly believe we train the future employees and if they can't accomplish a task. I'm one that believes that it's due when it is due. I pattern my class as if it were work.*

*Creating responsibility—you are responsible for your actions and your knowledge. We will help you any way we can, but ultimately you are going to be judged by what you do. I try to link the hours spent in the classroom with what you are going to do in the future. Relate effort and grades to work.*

7. What strategies or instructional moves are most effective in helping students learn your content/curriculum?

*Graphic Organizers, pre- and post-tests/instruction, Question-Answer, I enjoy project-based content; one-on-one guidance; group work. I don't rely on just one. We use them all.*

8. Tell me about curriculum standards and benchmarks in your district. How do they affect your practice?

*We developed a curriculum for World Cultures and Western Civ, I use them daily as a guide to instruction. I'm pretty systematic—I have to have a plot of what is going on. For the major ideas and themes they give me a common guide. So I'm accomplishing what the district, state and soon feds want us to be doing. It's a roadmap and I don't mind it. It helps.*

9. Has your school had a literacy initiative that you participated in? If “Yes,” what was it and what were its effects on staff and students? (Query interviewee on data sources if not mentioned.)

*I know we have literacy goals and they are to improve literacy scores school-wide. The last information I know is that we have achieved the goals. We are working to bring certain groups closer, to lessen the gap. Overall I think we are becoming more comfortable in accepting and teaching literacy. Without literacy none of the content is effective. We hit on the plans periodically so that the kids get it in all areas. I use newspapers, primary resources and expose kids to these because a lot are not exposed to these pieces.*

*Graphic Organizers/ Summarization*

*Reading in the Content Areas. ESL—teaching to those students—seminars.*

*We are involved in QAR workshop which addresses teaching kids how to ask questions themselves—we are doing it as a social studies department.*

*We are rewriting curriculum and want to incorporate QAR strategies within it.*

10. Does your school have a leadership team composed of administrators and teachers? How was it formed? How does it function? Are you a leadership team member?

Yes

*It was formed on a volunteer basis.*

*It functions through discussing issues, implementing ideas—which ones—R4 training throughout. Then they share it with the rest of the staff.*

*I am not a leadership team member.*

11. How many hours of professional development did the school faculty as a whole have last year? What were the topics? How did these sessions affect your teaching practices? How was implementation studied? (You may ask participants to describe the staff development schedule even if you have a copy of the school's Professional Development Plan.) Would you have modified this schoolwide staff development in any way? If so, how?

*Everybody has the mandated 8 hours. Our district is very good at allotting PD. We set aside a few days a semester to have PD as a whole. Individually it may vary—from the mandated to as many as they allow. I have been involved in numerous PD. I'm probably at the high end—at least 6 hours a month.*

*Graphic Organizers, R4, ESL training, Control Theory. I personally have had Teaching American History Grant; I will be attending Teaching Emotionally Difficult Students; Control Theory.*

*They expanded my ideas of teaching; helped me to understand the students; gave me the skills to become a better teacher for everyone.*

*Implementation logs were tracked over the computer. It was gathered over the last 2 years. It gave us the feedback and also the district of percentages implemented. It was a good guide. When you saw the numbers it allowed you to understand what you needed to do. It was a good guidance.*

12. How often does the faculty meet as a whole group? For what purposes? Are there other collaborative team meetings for professional development purposes?

*At least once a month, if not more. We have Wednesdays as shortened periods. It allows us to meet as a whole group—talk about building agendas and building goals. And where we are ranking and how we are doing. What we need to do better at.*

*Yes, we meet as a department now twice a month to work on QAR. We will meet as a dept. once a month to rewrite the curriculum; we have opportunities to meet with various reps from different depts. to talk about cross curricular stuff.*

13. What professional development experience had the most positive effect on student achievement in the courses you teach? (If the interviewee does not describe this experience, please ask her or him to do so.)

***I have seen the most positive effect with the graphic organizers and reading in the content areas—with professional development provider. You can use it so many different ways. It breaks it down.***

14. Is there anything that inhibits the development or maintenance of a professionally-focused learning community in your school? (If the interviewee identifies “time” as the inhibitor, ask if they have recommendations for how/when staff development could be offered.)

***Honestly, I think we as a school we are doing great things, but we have too many plates in the air. I've noticed that we don't stick with things until we get really good at it. But it's the nature of education. Implementation needs to be done better also.***

15. What needs to be done here at \_\_\_\_\_ to support students in continuously accelerating their literacy development in all content areas?

***We do a very good job addressing literacy in the content areas. To reach all of the populous we need to address the higher students. Our results are very solid.***

16. If you could change one thing at \_\_\_\_\_ that would make your work with students more effective, what would you like to try?

***I would change the size of classes because a lot of students get lost. My average class size is 30. At the freshman level a lot of kids are shy and don't speak up. They look like they are being successful, but they fall through the cracks sometimes. With smaller classes you develop better relationships with the students.***

17. Have you had any experience with distance learning (Web-based courses, ICN, televised courses)? If “Yes,” how did it work and how effective was it?

***I have had a little bit. ICN we had a couple of them. I have taken a class where computer-based learning was used—chalk board—how effective it was—it's not bad, but you have to be dedicated because it's you there. You have to be a little more focused.***



18. Please provide interviewees an opportunity to share anything they believe is pertinent to this inquiry into accelerating and supporting the development of adolescent literacy.

*I think in our town we are doing a good job. We live in a very diverse community; we try to reach those learners through literacy and to develop them as productive citizens. What I would like to see is an improvement in writing. Students do not know how to write. They are, regardless of groups, a large number of students' writing is poor.*

Name of Interviewee: Sample teacher Date: November 29, 2006

## Part One

### ***Goals for Educators and Educational Organizations***

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In this section, we provide lists of desirable goals for role groups responsible for the education of Iowa's adolescent learners. Team members identified the goals and attendant actions by studying the national reports on adolescent literacy, the *Core Curriculum for Iowa High Schools*, the most common tests administered to students in Iowa, and the 198 interviews conducted by team members in 36 middle and high schools. (Iowa Department of Education [IDE], 2006).

Table 3.1 lists knowledge, skills, and strategies identified as important for teachers in helping students develop literacy skills and knowledge in the content areas. The following is a discussion of the goals and desirable actions identified by interviewees.

While designed to be used as a model for high school science, literacy, and mathematics core curricula, Iowa's *Core Curriculum* is not course specific. It provides a view of what should be mastered by the end of the twelfth grade. In the area of literacy, the report states that "increasingly sophisticated levels of literacy are required by the student-turned-adult to successfully navigate society" (p. 15). It goes on to state that recognizing changing demands of the workplace requires students to have the ability to read technical texts and functional documents. Additionally, it points out that writing-on-demand skills—considered important to job success—should be incorporated as well as more familiar writing forms in adolescent instruction.

**Table 3.1**

Knowledge, Skills, and Strategies for Strengthening Literacy and Content Area Instruction

Knowledge	Skills	Strategies
<ul style="list-style-type: none"> <li>• Understanding of ways to make curriculum relevant to the needs of students and help students connect to the curriculum</li> <li>• Content and domain-specific knowledge</li> <li>• Deep understanding of literacy strategies for supporting student learning in the content areas</li> <li>• How to develop interdisciplinary units</li> <li>• Inquiry and explicit instruction strategies</li> <li>• The value of student discussion and teacher facilitated discussion to support content-area learning</li> <li>• The wide range of texts needed to support student learning</li> </ul>	<ul style="list-style-type: none"> <li>• Questioning</li> <li>• Teaching students to apply learning strategies</li> <li>• Integration of skill and strategies across content areas</li> <li>• Designing lessons that allow for learning and assessment of multiple skills and application of a range of knowledge from across disciplines</li> <li>• Engaging students in constructing knowledge including:               <ul style="list-style-type: none"> <li>▪ motivation</li> <li>▪ communication</li> <li>▪ differentiation</li> <li>▪ showing respect for all learners</li> <li>▪ collaboration</li> <li>▪ facilitation</li> <li>▪ helping students become self-regulated learners</li> </ul> </li> <li>• Use of co-teaching when appropriate</li> </ul>	<ul style="list-style-type: none"> <li>• Inquiry teaching and learning strategies</li> <li>• Modeling learning strategies and their application in the content area</li> <li>• Understanding and using metacognitive strategies</li> <li>• Using literacy strategies to support content areas of learning: questioning, comprehension, text structure and discourse knowledge, vocabulary</li> <li>• Using strategies that provide differentiated instruction</li> <li>• Using cooperative learning strategies, including group investigation</li> <li>• Incorporating high level thinking and questioning skills into lessons</li> <li>• Using write-to-learn strategies in the content areas</li> </ul>

While an interdisciplinary approach to teaching is mentioned in every content area of the *Core Curriculum*, the greatest interdisciplinary emphasis was given to literacy; noting that it is fundamental to all teaching and learning. According to the Iowa Department of Education, (2006):

Because of the recursive nature of learning in English language arts, students at every grade level apply fundamentally the same language concepts and skills. But as they learn and mature, students are asked to adapt these skills and concepts in new, more complex ways...Literacy skills need to be developed across the curriculum, not simply in an English/language arts classroom. Students expand their range when applying literacy skills to a variety of content areas because the academic discourses and disciplinary concepts in those require different approaches to reading, writing, speaking, viewing, and listening. It is through applying literacy skills

in a number of content areas that students learn to integrate these skills and strategies into life experience. Teachers who make literacy a priority understand that learning involves making meaning...Effective and efficient application of literacy strategies increases students' ability to internalize content knowledge and develop conceptual understanding of all subject matter. (p. 26)

The following lists address goals and actions developed from studying the documents identified earlier and from studying interviewee responses by role group.

1. From and for teachers:

- a. Provide access to print for students in a wide variety of genres in both classroom and school libraries
- b. Engage in Content Area Read-Alouds
- c. Provide time for students to read for a wide variety of purposes during the school day
- d. Provide explicit instruction in reading and writing strategies for students across all content areas
- e. Engage in interdisciplinary inquiry units to increase student engagement and motivation
- f. Use a variety of strategies, including the participatory and transmission approaches to teaching
- g. Have a clear understanding and wider breadth of knowledge in their content area and in the pedagogy of their content area
- h. Understand both the domain specific strategies and the general strategies required for students to navigate text
- i. Model and provide support to students so they can develop task persistence and experience success with literacy tasks
- j. Provide students with an opportunity to discuss their findings with peers and engage in problem solving

2. Teacher librarians: (media specialists)

- a. Continue to update school media centers with a wide variety of fiction and nonfiction materials, using lists available from the National Science Teachers Association, the National Social Studies Council, the National Council of Teachers of English, the International Reading Association, and other sources that provide content-area book lists
- b. Provide continued support for students in information literacy
- c. Provide book talks to students and teachers to encourage and support them as they engage in extensive reading
- d. Encourage teachers to utilize fiction and nonfiction books that support their content-area standards and benchmarks

3. Guidance Counselors:
  - a. Provide support for students in developing good reading habits and persistence in task completion
  - b. Provide support for students in developing a life-long love of learning and reading
  - c. Provide support for students in identifying literacy skills that are critical to success in the world of work
4. School-based administrators:
  - a. Provide financial support to support access for students to a wide variety of print in both classroom libraries and school libraries
  - b. Support classroom teachers as they develop an understanding of the research base for adolescent literacy
  - c. Understand the reciprocity between learning to read and reading to learn, and support teachers in this understanding
  - d. Provide classroom teachers with, and participate in, quality professional development in the area of adolescent literacy, using the Iowa Professional Development Model
  - e. Provide opportunities for classroom teachers to engage in discussion about domain-specific and content-specific knowledge needed by students
  - f. Support teachers in engaging in interdisciplinary inquiry units
  - g. Develop a culture of literacy within the school that supports and encourages teacher and student engagement in literacy activities
5. District office personnel, superintendents, and school board members:
  - a. Provide financial resources to support access for students to a wide variety of print in both classroom libraries and school libraries
  - b. Provide resources for quality professional development in the area of adolescent literacy
  - c. Communicate with stakeholders to provide an understanding of the need for accelerating adolescent literacy skills to meet the demands of the world of work in the 21<sup>st</sup> century
6. AEA consultants, supervisors, and directors:
  - a. Continue to provide quality staff development in the area of adolescent literacy, which will include theory, demonstration, and practice, as outlined in the Iowa Professional Development Model

- b. Continue to update AEA Media Centers with quality adolescent fiction and nonfiction resources
  - c. Provide districts with quality staff development in content-specific strategies and general strategies, to help students access the content and learn the skills outlined in Iowa's *Core Curriculum*
7. Department of Education:
- a. Continue to provide support for adolescent literacy by enhancing access to the external knowledge base
  - b. Provide education to stakeholders in Iowa regarding the importance of pedagogy and content knowledge
  - c. Provide resources (financial and informational) to stakeholders in Iowa regarding the importance of access to a wide variety of print materials
  - d. Continue to work on the depth versus breadth issue with curriculum implementation



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## Part Two

### ***Current Status of Student Performance in Grades Four through Twelve***

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What data are available to educators and the general public about students' performance in literacy in grades four through twelve? Results from the *Iowa Tests of Basic Skills (ITBS)* and/or results from the *Iowa Tests of Educational Development (ITED)* are available in all school districts in Iowa. The second most commonly-used formal evaluations are the reading and English tests that form part of the *ACT*. Approximately two-thirds of Iowa's seniors take the *ACT*. Reading and writing results from a sample of Iowa fourth and eighth grade students who participated in the *National Assessment of Educational Progress (NAEP)* also provide indicators of how Iowa students perform.

The following paragraphs will review data sources that inform us about students' reading proficiency in grades four and up, and data from Iowa's graduating seniors for 2007.

*ITBS* and *ITED* can be used to measure reading proficiency from elementary school through high school. The Iowa Department of Education has selected these tests for their annual statewide assessment: *ITBS* for grades K–8 and *ITED* for high school. Working with the test developers, Iowa Department of Education staff and other educators identified proficiency levels for No Child Left Behind (NCLB) using percentile ranges: 1<sup>st</sup>–40<sup>th</sup> percentile rank is *Less than Proficient*; 40<sup>th</sup>–99<sup>th</sup> rank is *Proficient*.

The 2004–2006 biennium results for reading in grade four represent 34,160 students, for grade eight 38,145 students, and for grade eleven 38,501 students. Iowa's student participation rate in these tests is very high. For example, in 2005–2006 it was around 99%, except for English language learners and special education students, for which it was still in the robust range of 95–99% participation. Using the proficiency levels

established for NCLB, 78% of fourth grade students, 71% of eighth grade students, and 77% of eleventh grade students scored in the proficient range. (Iowa Department of Education [IDE], 2006a).

Members of the Adolescent Literacy Research and Development Team (ALRDT), with the assistance of Iowa Department of Education staff, analyzed a subset of the *ITBS* and *ITED* data, and the 2004–2005 school year reading comprehension results for grades four, eight, and eleven (See Appendix items 1, 2, and 3). The results of the reading comprehension subtest, which uses multiple-choice items to determine how well students can construct accurate meaning from written texts, indicate that 69% of grade four students, 61% of grade eight students, and 61% of grade eleven students scored above the 50<sup>th</sup> percentile. Since the *ITBS* and the *ITED* are norm-referenced tests designed to have approximately half of the students scoring above the 50<sup>th</sup> percentile and half below, these are positive basic results.

As is true with the results of most tests administered widely in the United States, the distribution of scores for White and Asian students were skewed toward the upper ranges of performance. About 40% of White and Asian students scored above the 70<sup>th</sup> percentile while only 15–17% of African American and Hispanic students scored above the 70<sup>th</sup> percentile. In the lower range of the distribution the results were reversed.

Beyond racial and ethnic differences in performance, Iowa results for English language learners (ELL) and students with individualized education programs (IEP) also mirror the national pattern as shown in the *Annual Condition of Education Report* (IDE, 2006a), and the National Center for Educational Statistics (2003, 2006). Approximately two-thirds of Iowa's ELL and IEP students score at the 30<sup>th</sup> percentile or below on reading comprehension at these grade levels, meaning that most of these students have difficulty reading and learning from grade level texts. (See Appendix items 1, 2, and 3). In these data, ELL students represent 2–5% of the population and IEP students represent 11–14% of the population.

A group whose performance was of great concern to the members of the ALRDT was the one comprised of students receiving free or reduced lunches, an indicator of socioeconomic status. The reason team members were so concerned about this group is its performance and its size. These students were under-represented in the upper range of the distribution (around 45% of students not receiving free and reduced priced meals score above the 70<sup>th</sup> percentile compared to around 22% of those students receiving free and reduced lunch), and they were over-represented two-to threefold in the lower range of the distribution. *This group represents approximately one-third of all Iowa students tested in grades four and eight and one-fourth of those in grade eleven.* (Although some team members

felt the 11<sup>th</sup> grade percentage might be low in comparison to reality because older students might be more reluctant to be identified as part of the free or reduced lunch program.) While Iowa does not have many urban, inner-city, high-poverty schools, the data mirror the national picture in that economic status still predicts educational performance in most schools (Sirin, 2005).

Let's move now to another data source on the literacy performance of Iowa students in grades four and eight—results from the *NAEP* reading and writing assessments. *NAEP* is a criterion-referenced measure of student performance, meaning that students' scores are determined by how well they match the attributes of work at their grade level (<http://nces.ed.gov/nationsreportcard/about/>). A student's score places her or him into one of three achievement levels:

- *Basic*, meaning that this student's work denotes only partial mastery of the fundamental knowledge and skills necessary for success at that grade level
- *Proficient*, meaning this student's work denotes solid academic performance at that grade level
- *Advanced*, meaning this student's work denotes superior performance at that grade level

Another category, though not considered an official achievement level, is labeled "*below Basic*" for students whose work is far below what is needed to meet grade level demands. According to Judy Jeffery, Director of the Iowa Department of Education, *NAEP* assessments provide good comprehensive tests with a tougher standard of proficiency than the state's standard for fourth and eighth grade students (Middling Test Scores, 2005).

In general, the mean score of Iowa students in grades four and eight is about two to eight points higher on the *NAEP* reading scales than the national mean. (The *NAEP* reading scale ranges from 0 to 500, with most scores falling between 200 and 300.) In 2005, the last reading data currently available, 33% of Iowa's fourth grade students scored *Proficient* or *Advanced*, and 34% of Iowa's eighth grade students scored *Proficient* or *Advanced* (National Center for Educational Statistics [NCES], 2006a, 2006b).

Of special concern to the ALRDT were the gender differences in these results. At fourth grade, 35% of the males scored *Proficient* or *Advanced* compared to 46% of the females. At eighth grade, 28% of males scored *Proficient* or *Advanced* compared to 45% of the females (NCES, 2006a, 2006b). Results from the *NAEP* writing assessments of 2002 (the last year for which results are available) are only available for Iowa's grade four students. However, the gender gap in results is similar. The mean scale

score for Iowa female students was 166, and for male students, 144—a significant difference of 22 points (Grigg, Daane, Jin, & Campbell, 2003). These gender differences are similar to the ones at the national level; however, the gender differences in how students score on the *ITBS* and *ITED* are much smaller.

Many of Iowa's twelfth grade students take the *ACT*. However, it is not required of Iowa students, so its results do not provide a full picture of reading, English, or writing achievement in Iowa. In the last ten years, between 64–69% of Iowa graduates have taken the *ACT* according to the annual *Condition of Education Report* (IDE, 2006a), and it can be assumed that these students had postsecondary intentions. With these limitations in mind, what does this data source reveal about the status of adolescent reading and writing in the state?

*ACT* provides the following data from 2007:

- 61% of the 23,016 Iowa students who took the *ACT Reading* test met the readiness benchmark score of 21, compared to 53% nationally;
- 78% met the college readiness benchmark of 18 on the English test, compared to 69% of the national population.

In English, reaching the college readiness benchmark score indicates that students have a 50% chance of obtaining a *B* or higher, or about a 75% chance of a *C* or higher, in English Composition or similar courses. (Scores range from 1 to 36.) (ACT, 2007).

A closer look at Iowa's *ACT* data reveals that English scores have remained essentially steady (between 21.3 and 21.6) since 1991. The *Annual Condition of Education Report* shows that the scores are consistently about one point higher than those of the rest of the nation (IDE, 2006a). *ACT* English scores have a consistent, positive correlation with student-reported grade point average (GPA). Students who have higher GPAs earn higher scores on the English section of the *ACT*.

On the *ACT Optional Writing Test*, 4,994 Iowa students in the high school graduating class of 2007 took both the English and the essay tests. These students had a mean on the English examination of 24.2 (compared to 22.3 nationally) and a mean on the essay of 7.7 (compared to 7.6 nationally).

Why the concern about student performance with all these results indicating that the mean scores of Iowa students are higher than that of comparable grade level students nationally? Depending on which measure you look at, *ITBS* or *ITED*, about 25–30% of students in grades four, eight, and eleven are *not* proficient in comprehending text. Using the tougher *NAEP* standards, around 65% of students in grades four and eight are not

proficient enough in reading to easily meet the literacy demands at their grade levels, and to learn from reading and writing. And, as some team members and *Des Moines Register* (Middling Test Scores, 2005) editors reminded us: in 1992, Iowa and Maine fourth graders tied for first in the nation in reading on the *NAEP*; in 2005, the mean scores of 18 states were higher (although only 11 were significantly higher).

Of course, the size of the population of students who come from less affluent backgrounds and who struggle with reading and writing is of great concern to the ALRDT. Iowa's curriculum and instruction and its citizens' strong belief in the value of education should have these students performing at higher levels. The gender differences and their patterns are also worrisome.

There are many quality programs already in place for special education students, who total 11–14% of the student population, and for English language learners, who total 2–5%. In contrast, 30% of students are in the low socioeconomic status group, and 50% of students are male—many of whom also struggle daily in grades four through twelve. Many members of the ALRDT believe that changes in curriculum and instruction can positively influence the performance of all but about 1–3% of Iowa students.

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## **Appendix**

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Item 1: Analyzing and Reporting Our Data Structured Response Sheet –  
4<sup>th</sup> Grade ITBS

Item 2: Analyzing and Reporting Our Data Structured Response Sheet –  
8<sup>th</sup> Grade ITBS

Item 3: Analyzing and Reporting Our Data Structured Response Sheet –  
11<sup>th</sup> Grade ITED

# **Item 1: Analyzing and Reporting Our Data Structured Response Sheet – 4<sup>th</sup> Grade ITBS**

**School Name:** All Schools

**District Name:** State of Iowa

**Data Analyzed By:** Iowa Department of Education Literacy Team

**Data Collection Period:** 2004-2005

**Date of Analysis:** August 4, 2006

**Type of Data Analyzed:** (Please indicate the data source you are analyzing.)

## **Student Performance**

☐ Just Read

☐ Grades/Progress

☐ Indicators

☒ ITBS/ITED

☐ Diagnostic/Classroom/

Screening (Circle One and  
Identify: \_\_\_\_\_)

☐ Other: \_\_\_\_\_

Grade Level: 4

Content/Performance Assessed:

Reading Comprehension

# Students Represented:

33,202

## **Implementation**

☐ Read-Aloud

☐ Think-Aloud

☐ Explicit Instruction

☐ Picture Word

☐ Inductive Model

☐ Question and

Response (QAR)

☐ Graphic Organizers

☐ Nonfiction/Fiction

☐ Classroom Collection

☐ Other: \_\_\_\_\_

# Faculty Represented:

## **Other**

☐ Fiction/Nonfiction

☐ Read-Aloud Balance

☐ Other: \_\_\_\_\_

## **1. What do you notice when you look at these data? What are you comfortable saying about student or staff performance based on these results?**

- a. 69% of the students performed above the 50<sup>th</sup> percentile. Since ITBS is a norm-referenced test, these results are very good: the majority of students are performing well, with around 45% performing very well (above the 70<sup>th</sup> percentile).
- b. At the upper range of performance (above the 70<sup>th</sup> percentile), there is very little gender difference (3% more females); that is excellent. At the lower range of performance (30<sup>th</sup> percentile and below), the gender difference is also minimal (4% more males).
- c. Demographics such as socioeconomic status (as indicated by participation in free and reduced lunch [FRL]), ethnicity and native language are determining or having a greater effect on student performance than the curricular or instructional programs being provided:
  - Students participating in FRL are over-represented in the lower range of performance (30<sup>th</sup> percentile and below: 27%) compared to students not participating in FRL (10%) and under-represented in the upper ranges (above 70<sup>th</sup> percentile, 28%) compared to students not participating in FRL (54%). 11,457 students participated in FRL.
  - The distribution of results for White and Asian students is skewed toward the upper ranges of performance (48% of White students above 70<sup>th</sup> percentile; 47% of Asian) while the distribution for African-American and Hispanic students is skewed toward the lower ranges of performance (36% of African-American students scored at the 30<sup>th</sup> percentile and below, with 20% above the 70<sup>th</sup> percentile; 34% of Hispanic students scored at the 30<sup>th</sup> percentile and below, with 21% above the

70<sup>th</sup> percentile). While African-American (# 1,713) and Hispanic (# 1,992) students represent a small portion of the population, they are over-represented among struggling readers based on these results. Because we only have 206 American Indian students out of a total population of 33,202 (which represents approximately  $\frac{1}{2}$  of 1%), we are not able to make a meaningful statement about student performance for this subgroup within the context of statewide data.

- 44.5% of English language learners scored at the 30<sup>th</sup> percentile and below; about 10% above the 70<sup>th</sup> percentile (1,298 students identified as ELL).
- d) Based on these results, the majority of students with IEPs are struggling readers (56% scoring at the 30<sup>th</sup> percentile and below). Their current curriculum and instruction is not helping these students become skillful enough to manage the reading demands at the upper elementary level.

**2. What additional questions do these data generate?**

- a. Do we have schools in which demographics (especially SES and ethnicity) are not determining student performance?
- b. Do we have schools in which students with IEPs learn to read well enough that they can successfully navigate upper elementary level materials?
- c. Is there a relationship between SES/FRL and ethnicity; between SES/FRL and IEPs?
- d. Is there a relationship between gender and IEP?
- e. Are these data being used to modify curriculum and instruction? How?
- f. What does the professional knowledge base say about what is possible in regard to student subgroup performance, especially by SES, ethnicity, special needs/IEP?
- g. Reading comprehension tests assess more than reading rate, vocabulary knowledge, and the application of reading comprehension strategies. How does one's breadth of knowledge about language and how the world works affect these results?
- h. Do the data (# 1,298) truly represent the total number of ELL fourth grade students in Iowa?
- i. How do the data from other grade levels compare with these? Other cohort groups?

**3. What do these data indicate students need to work on? Based on these data, what can we infer that teachers need to work on?**

- a. Students need to read more extensively and continue developing their repertoire of reading strategies.
- b. Many teachers need to expand the number of scientifically based instructional strategies they are using to teach reading and develop literacy.
- c. Many upper elementary teachers will need to teach students how to read and learn from their content area materials.
- d. All teachers need to be aware of students' levels of reading comprehension.

- 4. What do these results and their implications mean for your school, district, or regional improvement plans?**
- a. *Plan for or continue to collect and use information about student performance in reading.*
  - b. *Plan for or continue to provide quality professional development (WELL IMPLEMENTED!) in literacy with special attention to reading comprehension and writing across the content areas.*
  - c. *Review and revise, as needed, each district's standards and benchmarks in the area of reading and literacy.*
  - d. *Collect information about how student development in literacy is being accelerated at the primary, upper elementary, middle, and high school levels. Find out:*
    - *How many schools have intensive reading/literacy programs in place to accelerate the reading and literacy development of struggling readers? How successful are these programs? How do we expand the most successful ones?*
    - *How well prepared are our upper elementary, middle, and high school teachers to develop literacy within their content areas?*
    - *What is the current state of support for accelerating the literacy development of all students in the school/district?*
    - *What kinds of professional development are being provided to teachers to help them meet these challenging tasks?*
    - *How are we supporting school and district staff in using multiple data sources to inform them about students' ability to use the materials of schooling?*
  - e. *All stakeholders need to study the external knowledge base related to literacy and its instruction, especially for those students who struggle.*

**Item 2:** Analyzing and Reporting Our Data Structured Response Sheet –8<sup>th</sup> Grade ITBS

**School Name:** All Schools

**District Name:** State of Iowa

**Data Analyzed By:** Iowa Department of Education Literacy Team

**Data Collection Period:** 2004-2005

**Date of Analysis:** June 26, 2006

**Type of Data Analyzed:** (Please indicate the data source you are analyzing.)

**Student Performance**

☐ Just Read  
☐ Grades/Progress Indicators  
☒ ITBS/ITED  
☐ Diagnostic/Classroom/ Screening (Circle One and Identify: \_\_\_\_\_)  
☐ Other: \_\_\_\_\_

Grade Level: 8

Content/Performance Assessed:

Reading Comprehension

# Students Represented:

37,106

**Implementation**

☐ Read-Aloud  
☐ Think-Aloud  
☐ Explicit Instruction  
☐ Picture Word Inductive Model  
☐ Question and Response (QAR)  
☐ Graphic Organizers  
☐ Nonfiction/Fiction Classroom Collection  
☐ Other: \_\_\_\_\_

**Other**

☐ Fiction/Nonfiction  
☐ Read-Aloud Balance  
☐ Other: \_\_\_\_\_

# Faculty Represented:

**1. What do you notice when you look at these data? What are you comfortable saying about student or staff performance based on these results?**

- a. 61% of the students performed above the 50<sup>th</sup> percentile. Since ITBS is a norm-referenced test, these results are very good: the majority of students are performing well, with around 39% performing very well (above the 70<sup>th</sup> percentile).
- b. At the upper range of performance (above the 70<sup>th</sup> percentile), there is very little gender difference (3% more females), that is excellent. However, at the lower range of performance (30<sup>th</sup> percentile and below), the gender difference is larger (6% more males).
- c. Demographics such as socioeconomic status (as indicated by participation in free and reduced lunch [FRL]), ethnicity and native language are determining or having a greater effect on student performance than the curricular or instructional programs being provided:
  - Students participating in FRL are over-represented in the lower range of performance (30<sup>th</sup> percentile and below: 35%) compared to students not participating in FRL (13%) and under-represented in the upper ranges (above 70<sup>th</sup> percentile, 22%) compared to students not participating in FRL (46%). 11, 225 students participated in FRL; about one-third (31%) are reading at 4<sup>th</sup> grade level and below.
  - The distribution of results for White and Asian students is skewed towards the upper ranges of performance (41% of White students above 70<sup>th</sup> percentile; 39% of Asian) while the distribution for African-American and Hispanic students is skewed towards the lower ranges of performance (44% of African-American students scored at the 30<sup>th</sup> percentile and below, with 16.5 above the 70<sup>th</sup>

percentile; 42% of Hispanic students scored at the 30<sup>th</sup> percentile and below, with 17% above the 70<sup>th</sup>). While African-American (# 1,643) and Hispanic (1,732) students represent a small portion of the population, they are over-represented among struggling readers based on these results (African-American, 37% reading at 4<sup>th</sup> grade level and below; Hispanic, 38%).

- 65% of English Language Learners scored at the 30<sup>th</sup> percentile and below; about 6% above the 70<sup>th</sup> percentile (764 students identified as ELL)
- d. Based on these results, the majority of students with IEPs are struggling readers (65% scoring at the 30<sup>th</sup> percentile and below), with 45% reading at 4<sup>th</sup> grade level and below. Their current curriculum and instruction is not helping these students become skillful enough to manage the reading demands of middle school and high school-level materials.

## **2. What additional questions do these data generate?**

- a. Do we have schools where demographics (especially SES and ethnicity) are not determining student performance?
- b. Do we have schools where students with IEPs learn to read well enough that they can successfully navigate secondary level materials?
- c. Is there a relationship between SES/FRL and ethnicity; between SES/FRL and IEPs? (Maybe crosstabs with FRL and African-American; between FRL and IEPs could provide info.)
- d. What is the cumulative effect of having about 6% more males at the lower ranges of reading performance? Is there a relationship between gender and IEP?
- e. Do the IEP results include data from students who are severely/profoundly, multiply handicapped?
- f. How are these data being used to think about modifications in curriculum and instruction?
- g. What does the professional knowledge base say about what is possible in regard to student subgroup performance, especially by SES, ethnicity, special needs/IEP?
- h. Reading comprehension tests assess more than reading rate, vocabulary knowledge, and the application of reading comprehension strategies. Is there an effect of breadth of knowledge about language and how the world works on results?

## **3. What do these data indicate students need to work on? Based on these data, what can we infer that teachers need to work on?**

- a. About 20% of these students (especially students with low-SES, with IEPs, or who are African-American and Hispanic) need to read more extensively and add more reading strategies to their toolkit. However, these actions would also be useful for almost all students.
- b. Many teachers need to expand the number of scientifically based instructional strategies they are using to teach reading and develop literacy.

- c. *Many middle and high school teachers will need to teach students how to read and learn from their content area materials.*
  - d. *Primary grade teachers need to continue to monitor student performance in reading comprehension, and upper elementary, middle, and high school teachers need to be aware of students' levels of reading comprehension.*
- 4. What do these results and their implications mean for your school, district, or regional improvement plans?**
- a. *Plan for or continue to collect information about student performance in reading.*
  - b. *Plan for or continue to provide quality professional development in reading comprehension and literacy in the content areas.*
  - c. *Review districts' standards and benchmarks in the area of reading and literacy.*
  - d. *Collect information about how student development in literacy is being accelerated at the upper elementary, middle, and high school levels. Find out:*
    - *How many schools have intensive reading/literacy programs in place to accelerate the reading and literacy development of struggling readers? How successful are these programs? How do we expand the most successful ones?*
    - *How well-prepared are our upper elementary, middle, and high school teachers to develop literacy within their content areas?*
    - *What is the current state of support for accelerating the literacy development of all students in the school/district?*
    - *What kinds of professional development are being provided to teachers to help them meet these challenging tasks?*
    - *How are we supporting school and district staff in using multiple data sources to inform them about students' ability to use the materials of schooling?*

### Item 3: Analyzing and Reporting Our Data Structured Response Sheet – 11<sup>th</sup> Grade ITED

School Name: All Schools

District Name: State of Iowa

Data Analyzed By: Iowa Department of Education Literacy Team

Data Collection Period: 2004-2005

Date of Analysis: June 26, 2006

Type of Data Analyzed: (Please indicate the data source you are analyzing.)

#### Student Performance

☐ Just Read  
☐ Grades/Progress Indicators  
☒ ITBS/ITED  
☐ Diagnostic/Classroom/ Screening (Circle One and Identify: \_\_\_\_\_)  
☐ Other: \_\_\_\_\_

Grade Level: 11

Content/Performance Assessed:

#### Reading Comprehension

# Students Represented:  
33,324

#### Implementation

☐ Read-Aloud  
☐ Think-Aloud  
☐ Explicit Instruction  
☐ Picture Word Inductive Model  
☐ Question and Response (QAR)  
☐ Graphic Organizers  
☐ Nonfiction/Fiction Classroom Collection  
☐ Other: \_\_\_\_\_

# Faculty Represented: \_\_\_\_\_

#### Other

☐ Fiction/Nonfiction  
☐ Read-Aloud Balance  
☐ Other: \_\_\_\_\_

#### 1. What do you notice when you look at these data? What are you comfortable saying about student or staff performance based on these results?

- a. 61% of the students performed above the 50<sup>th</sup> percentile. Since ITED is a norm-referenced test, these results are very good; the majority of students are performing well, with around 35% performing very well. (above the 70<sup>th</sup> percentile)
- b. At the upper range of performance (above the 70<sup>th</sup> percentile), there is a gender difference of approximately 9 percent between females and males (42.5 % of females and 33.7 % of males scoring above the 70<sup>th</sup> percentile.). At the lower range of performance (30<sup>th</sup> percentile and below), the gender difference is slightly smaller (7 % more males)
- c. Demographics such as socioeconomic status (as indicated by participation in free and reduced lunch [FRL]), ethnicity and native language are determining or having a greater effect on student performance than the curricular or instructional programs being provided:
  - Students participating in FRL are over-represented in the lower range of performance (30th percentile and below: 30%) compared to students not participating in FRL (13%) and under-represented in the upper ranges (above 70th percentile, 21%) compared to students not participating in FRL (43%). {Extrapolated 42% of students receiving free/reduced lunch are reading at 6th grade level or below.}
  - The distribution of results for White and Asian students is skewed towards the upper ranges of performance (40% of White students above 70<sup>th</sup> percentile; 41% of Asian) while the distribution for African-American and Hispanic students is skewed towards the lower ranges of performance (36% of African-American



students scored at the 30<sup>th</sup> percentile and below, with 15% above the 70<sup>th</sup> percentile; 38% of Hispanic students scored at the 30<sup>th</sup> percentile and below, with 15% above the 70<sup>th</sup>). While African-American (#1,088) and Hispanic (#1,198) students represent a small portion of the population, they are over-represented among struggling readers based on these results (Extrapolated 49% of African-American students and 49% of Hispanic students are reading at the 6<sup>th</sup> grade level and below.)

- 60% of English Language Learners scored at the 30<sup>th</sup> percentile and below; about 4% above the 70<sup>th</sup> percentile (482 students identified as ELL)
- d. Based on these results, the majority of students with IEPs are struggling readers (60% scoring at the 30<sup>th</sup> percentile and below). (Extrapolated 57% are reading at the 6<sup>th</sup> grade level or below.) Their current curriculum and instruction is not helping these students become skillful enough to manage the reading demands of high school-level materials.

**2. What additional questions do these data generate?**

- a. Do we have schools where demographics (especially SES and ethnicity) are not determining student performance?
- b. Do we have schools where students with IEPs learn to read well enough that they can successfully navigate secondary level materials?
- c. For students with IEPs, how do their scores in Science and Social Studies compare to their reading comprehension scores? To what extent are modifications affecting Science and Social Studies scores?
- d. What is the relationship between SES/FRL and ethnicity; between SES/FRL and IEPs?
- e. What is the cumulative effect of having about 7% more males at the lower ranges of reading performance? Is there a relationship between gender and IEP?
- f. How are these data being used to think about modifications in curriculum and instruction?
- g. What does the professional knowledge base say about what is possible in regard to students subgroup performance, especially by SES, ethnicity, special needs/IEP?
- h. Reading comprehension tests assess more than reading rate, vocabulary knowledge, and the application of reading comprehension strategies. Is there an effect of breadth of knowledge about language and how the world works on results?

**3. What do these data indicate students need to work on? Based on these data, what can we infer that teachers need to work on?**

- a. About 17% of these students (especially students with low-SES, with IEPs, or who are African-American and Hispanic) need to read more extensively and add more reading strategies to their toolkit. However, these actions would also be useful for almost all students.
- b. Many teachers need to expand the number of scientifically based instructional strategies they are using to teach reading and develop literacy.

- c. *Many high school teachers will need to teach students how to read and learn from their content area material.*
  - d. *Primary grade teachers need to continue to monitor student performance in reading comprehension, and upper elementary, middle, and high school teachers need to be aware of students' level of reading comprehension.*
- 4. What do these results and their implications mean for your school, district, or regional improvement plans?**
- a. *Plan for and continue to collect information about student performance in reading.*
  - b. *Plan for and continue to provide quality professional development in reading comprehension and literacy in the content areas.*
  - c. *Review districts' standards and benchmarks in the area of reading and literacy.*
  - d. *Collect information about how student development in literacy is being accelerated at the upper elementary, middle, and high school levels. Find out:*
    - *How many schools have intensive reading/literacy programs in place to accelerate the reading and literacy development of struggling readers? How successful are these programs? How do we expand the most successful ones?*
    - *How well-prepared are our upper elementary, middle, and high school teachers to develop literacy within their content areas?*
    - *What is the current state of support for accelerating the literacy development of all students in the school/district?*
    - *What kinds of professional development are being provided to teachers to help them meet these challenging tasks?*
    - *How are we supporting school and district staff in using multiple data sources to inform them about students' ability to use the materials of schooling?*

## Part Two

### ***Current Status and Concerns from Team Members, Interviewees, and Public Documents Reviewed***

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What do we know about how school faculties and districts are supporting adolescent literacy in Iowa? How they use data to make decisions? To what degree are the components that support schoolwide improvements in literacy in place? What initiatives are currently being pursued and what are their effects? What are the perceptions of local educators about their professional development experiences and the effects on students? And what instructional strategies are perceived as being most effective in helping students learn content area concepts and curriculum content?

While most members of the Adolescent Literacy Research and Development Team (ALRDT) are working in schools and districts on a daily basis to support school faculties and district administrators, we wanted an opportunity to formally listen to our colleagues and hear their voices and perceptions about local practices in support of adolescent literacy. In order to make this data-gathering effort most productive for team members while still collecting the information needed, team members were asked to select two schools that they would be working with in the 2006–2007 school year—one middle school and one high school. Thus, the 198 participants interviewed from 36 schools in 23 districts were a sample of convenience, not a random sample.

ALRDT members were asked to interview at least six persons, and if possible, up to nine, in their selected middle and high schools. To make sure we were hearing from a variety of role groups, team members interviewed the principal, at least two teachers from the academic areas (science, social studies, mathematics, and the English language arts), at least one teacher from a non-core academic area, the teacher librarian, and a guidance counselor.

Table 5.1 displays the number of respondents in each category:

**Table 5.1**

Number and Percent of Respondents Interviewed by Role Group  
(Interviews conducted between July and December 2006)

Respondent Category	# Respondents	% of Sample
Teachers—Total	110	56%
Middle School	45	
High School	65	
Teacher Librarians	24	12%
Guidance Counselors	29	15%
Principals	35	18%
Middle School	15	
High School	20	
<b>Total Respondents</b>	<b>198</b>	<b>101*</b>

\*Because of rounding, percentages total more than 100.

Approximately 60% of the teacher respondents, 95% of the teacher librarians, 70% of the guidance counselors, and 35% of the principals were females. Approximately one-third of the teacher respondents taught courses such as business, art, industrial arts, band, Second Chance Reading, life skills, and physical education and health.

Interview protocols consisted of open-ended questions designed to solicit information about the use of components of school improvement and the perceptions of respondents about how students and staff were being supported in their learning and work. (See a sample interview form in the Appendix for this section.)

Information about goals and concerns from these interviewees has been shared in other sections of the report. Here we provide a brief summary of the responses related to distributed leadership, data use, the setting of priorities, perceptions of fluency and comprehension, use of standards and benchmarks, effective professional development experiences, most effective instructional practices identified by teachers, and impediments to the development of schoolwide learning communities.

### Distributed Leadership

All respondents reported having leadership teams composed of teachers and administrators at their schools and that these teams met regularly. Principals and middle school teachers' responses about how these leadership teams were formed and how they functioned mentioned participatory procedures most frequently, such as volunteering, elections,

or a combination of volunteering and appointments. High school teachers and guidance counselors identified appointments to these teams more often than volunteers and elections, while teacher librarians were relatively evenly split between appointments and voluntary processes.

### **Data Use and Sources for Setting Priorities and Planning Lessons**

Data from standardized tests such as the *Iowa Tests of Basic Skills (ITBS)* and *Iowa Tests of Educational Development (ITED)* results were the most commonly mentioned data sources looked at by faculties as a whole. *Managed Assessment Portfolio System (MAPS)*, *Standardized Testing and Reporting (STAR)*, *Basic Reading Inventory (BRI)*, and classroom data were each mentioned by about 10% of the respondents. The most common sources of information identified for use in setting priorities and planning lessons were *ITBS* and *ITED* results, textbooks, standards and benchmarks, and other resources such as professional organizations and conference content. High school teachers especially mentioned use of materials external to the local setting in planning lessons, i.e., the use of online materials, current events, speakers, personal experiences, magazines, and newspapers. Middle school teachers more than any other group addressed the influence of curriculum standards and benchmarks on their work with students.

### **Perceptions of the Percentage of Fluent Readers**

Respondents were asked to estimate the percentage of students who could “read fluently and comprehend the materials” they were given as learning resources: 15% of respondents estimated that 80–100% of students could read fluently and comprehend the curriculum materials used; 40% estimated somewhere between 50–79%; and 45% estimated that somewhere between 5% and 49% of their students could read fluently and comprehend the materials being used.

### **The Presence and Content of Literacy Initiatives**

One hundred and forty respondents (approximately 70%) indicated that literacy had been or currently was the focus of their professional development. When asked what needed to be done in their schools to support students in accelerating literacy across the content areas, 60% of these faculty members indicated that their school needed to continue with the current reading or writing initiative. Teachers expressed this desire more frequently (by number and percentage of role group) than did principals, teacher librarians, and guidance counselors. For teachers and principals, the next most frequent recommendations for supporting continuous acceleration of students’ literacy development were staying focused, evaluating current practices, and providing stronger leadership. Guidance

counselors and teachers also frequently recommended increasing various resources such as time, materials, money, and personnel.

The content focus of some of the most frequently identified literacy initiatives included vocabulary building strategies, reading comprehension strategies including Think-Alouds and Read-Alouds, Question-Answer Relationships (QAR), Second Chance Reading (SCR), and reading in the content areas. Writing initiatives were far less common than reading initiatives, but the content mentioned in six schools included Six Traits Writing, writing assessments, and Writing to Learn. Other initiatives focused on implementation of Marzano's strategies and work on school culture/climate. Middle school teachers indicated studying implementation of the instructional strategies they were working on more frequently than did high school teachers.

### **Effective Professional Development Experiences**

When asked about the professional development experience that had the most positive effect on student achievement in their courses, teachers mentioned specific strategies and programs such as vocabulary instruction strategies, reading strategies in the content areas, and SCR. There were many experiences identified by one to three respondents, such as Madeline Hunter's mastery learning, Teacher Expectations and Student Achievement (TESA), Ruby Payne's Research I, Writer's Workshop, Every Student Counts (ESC), Creating Independence through Student-owned Strategies (CRISS), and Collaborative Strategic Reading (CSR). About a dozen respondents identified their masters' program or specific courses, such as a University of Iowa calculus course, as their best and most useful professional development experience.

### **Effective Instructional Practices**

Interviewees were asked to identify teaching strategies that were most effective in helping students learn content area curriculum. Collaborative student work and cooperative learning strategies formed the most frequent response category from middle and high school teachers (# 35), followed by modeling of learning strategies and procedures for problem solving (# 25), and hands-on projects (# 18). Graphic organizers were identified by nine high school teachers, while four middle school teachers identified visual aids as most conducive to learning their content. Drill and practice activities were identified as most effective for their students by nine high school and one middle school teacher. Direct teaching of vocabulary words (five middle school and two high school teachers, Frayer method identified by one teacher at each level), making connections to real life (two middle school teachers and two high school teachers), guided practice (five middle school teachers), lecture (five high school teachers), and one-to-one tutoring (five

high school teachers) were the last strategies or instructional practices mentioned with any frequency. About 40 other instructional actions were identified as most effective by one to four respondents, e.g., use of humor, choice of activities for students, QAR, and providing opportunities for discussion.

### **Inhibitors to the Development and Sustainability of Professional Learning Communities**

When asked if anything inhibits the development or maintenance of professionally-focused learning communities, time was by far the most common inhibitor identified. Middle and high school teachers and principals identified negative attitudes and teacher resistance as the second major inhibiting factor. And, a category that included lack of focus and leadership and too much fragmentation was identified as the third inhibitor. Of course, all three of these interact with each other to create an environment that is conducive, or not, to learning. Readers may be interested in noting that nine middle school and three high school teachers indicated that there were no inhibiting factors that had not been successfully addressed in their settings.

### **Information about the Current Status of Literacy Initiatives and School Improvement Components: One More Data Source to Consider When Planning**

While not a representative sample of all Iowa teachers in grades four through twelve, the range of the settings of these middle school and high school faculty members from rural, suburban, urban, and from large and small school districts yields much useful information on the current status of literacy curriculum and instruction and the degree to which the components of school improvement are in place in these schools.

## ***Appendix***

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Blank Individual Interview Form for Teachers: 2006



**Individual Interview Form for Teachers: 2006**

School: \_\_\_\_\_

Name of Teacher: \_\_\_\_\_

Gender: male female

Years of Experience:

As an Educator	
In this Role/Position	
Teaching in this School	
Highest Degree Conferred	

Certifications Held:

\_\_\_\_\_

Current Courses Being Taught/Other Major Responsibilities:

\_\_\_\_\_

1. What data do the faculty as a group use—and when and how do they use these data—to inform everyone about the student population and about students' progress as learners? (If the interviewee does not mention any literacy data, ask if he or she can recall any data on reading or writing that the faculty reviewed last year or this year.)
2. What kinds of information, materials, and data do you use in planning lessons and units?
3. In your estimation, what percentage of your students can read fluently and comprehend the materials that are part of your courses? How do you figure this out? What supports are there for students who are struggling readers?
4. What is your greatest concern when you think about student achievement and performance in your school?
5. Are there subgroups you are concerned about? (Populations the faculty have greater difficulty supporting)
6. What are two or three big ideas, competencies, or skills you want students to gain or develop in your \_\_\_\_\_ course? (The interviewee may identify one or several courses.)

7. What strategies or instructional moves are most effective in helping students learn your content/curriculum?
8. Tell me about curriculum standards and benchmarks in your district. How do they affect your practice?
9. Has your school had a literacy initiative that you participated in? If “Yes,” what was it and what were its effects on staff and students? (Query interviewee on data sources if not mentioned.)
10. Does your school have a leadership team composed of administrators and teachers? How was it formed? How does it function? Are you a leadership team member?
11. How many hours of professional development did the school faculty as a whole have last year? What were the topics? How did these sessions affect your teaching practices? How was implementation studied? (You may ask participants to describe the staff development schedule even if you have a copy of the school’s Professional Development Plan.) Would you have modified this schoolwide staff development in any way? If so, how?
12. How often does the faculty meet as a whole group? For what purposes? Are there other collaborative team meetings for professional development purposes?
13. What professional development experience had the most positive effect on student achievement in the courses you teach? (If the interviewee does not describe this experience, please ask her or him to do so.)
14. Is there anything that inhibits the development or maintenance of a professionally-focused learning community in your school? (If the interviewee identifies “time” as the inhibitor, ask if they have recommendations for how/when staff development could be offered.)
15. What needs to be done here at \_\_\_\_\_ to support students in continuously accelerating their literacy development in all content areas?

16. If you could change one thing at \_\_\_\_\_ that would make your work with students more effective, what would you like to try?
17. Have you had any experience with distance learning (Web-based courses, ICN, televised courses)? If "Yes," how did it work and how effective was it?
18. Please provide interviewees an opportunity to share anything they believe is pertinent to this inquiry into accelerating and supporting the development of adolescent literacy.

Name of Interviewee: \_\_\_\_\_ Date: \_\_\_\_\_

## Part Two

### ***Review of the Knowledge Base in Adolescent Literacy and Organizational Supports for Literacy Development***

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#### **Developing Adolescent Literacy: A Description of the Literacy Content and the Selection Criteria for Materials Selected for Collective Study**

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The work of the Adolescent Literacy Research and Development Team (ALRDT) was focused around the question: How do we accelerate adolescent literacy? To pursue this question, team members had to define literacy, identify the grade levels of students considered adolescents, study the current status of student performance, and determine which aspects of literacy would be studied.

#### **What Aspects of Literacy Were Studied?**

The ALRDT defined literacy broadly as “the ability to read, write, speak, listen, view, and think effectively” and the population of adolescents to support as “students in grades four through twelve.” Analyzing the complete knowledge base and making recommendations to improve all of these abilities for all adolescents is beyond the expertise of the team and beyond the scope of this document. Instead, the team focused on academic literacy—especially reading and writing to learn, in grades four through twelve. Discussion, listening, viewing, and thinking were addressed as tools in support of learning.

Six strands of study formed the academic literacy curriculum content:

- The role of reading volume and access to print in accelerating adolescent literacy
- Vocabulary knowledge and vocabulary development
- Reading fluency
- Reading comprehension

- Discussion
- Writing

These six strands were identified by the external consultant to the team. They include as much or more literacy strands than most textbooks that address adolescent literacy and content area literacy (e.g., Alvermann & Phelps, 2005; Daniels & Zemelman, 2004; Fisher & Frey, 2004; Vacca & Vacca, 2005; Worthy, Broaddus, & Ivey, 2001). They also include three of the five components from the *Report of the National Reading Panel: Teaching Children to Read* (National Reading Panel, 2000). Phonemic awareness and phonics were not addressed as a major curriculum strand for adolescents because very few are struggling with phonological processing, and disabled high school readers have the phonological processing skills of average, proficient fifth graders (Curtis, 2004; Torgesen, & Hudson, 2006; Torgesen et al. 2007).

### What Were the Sources of and Selection Criteria for Information Studied?

One of the reasons for studying the knowledge base was to identify converging evidence in order to make recommendations for inquiry and actions by school and district faculties, school boards, and Area Education Agencies (AEA) and Department of Education (DE) staff. To provide an opportunity for team members to think about the nature of knowledge that can be used in building credible evidence for action, one of the first documents read and discussed by the team was *Using Research and Reason in Education: How Teachers Can Use Scientifically Based Research to Make Curricular and Instructional Decisions* (Stanovich & Stanovich, 2003). The authors of this document identify three sources of credible evidence of effectiveness:

- Demonstrated student achievement in **formal testing** situations implemented by the teacher, school, district, or state;
- **published findings of research-based evidence** that the instructional methods being used by teachers lead to student achievement;
- **proof of reason-based practice** that converges with a research-based consensus in the scientific literature. This type of justification of educational practice becomes important when direct evidence may be lacking (a direct test of the instructional efficacy of a particular method is absent), but there is a theoretical link to research-based evidence that can be traced. (p. 1)

With the mission of identifying credible evidence for action in mind, what sources were used as information about these six strands? The team read and analyzed three national reports on reading and literacy:

- *Reading next—A Vision for Action and Research in Middle and High*

*School Literacy: A Report from Carnegie Corporation of New York* (Biancarosa & Snow, 2004)

- *Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools* (Graham & Perin, 2007)
- *Adolescents and Literacy: Reading for the 21<sup>st</sup> Century* (Kamil, 2003)

All team members were also given a copy of *Adolescent Literacy Research and Practice* (Jetton & Dole, 2004), the most recent book on research in adolescent literacy, as a resource and for group processing of several chapters. More than 30 other documents were read and analyzed by the team as individuals and as a group. The sources of these documents include

- peer-reviewed research journals;
- reading and writing research handbooks;
- research reports;
- books by scholars in:
  - reading development;
  - vocabulary development;
  - content area reading;
  - reading comprehension;
  - discussion and discourse in the content areas;
  - writing and writing to learn;
- articles from popular journals such as *Educational Leadership* and *The Journal of Adolescent and Adult Literacy*.

The weight of the readings were research syntheses, or documents from the *Handbooks of Reading Research*:

- *Volumes II and III* and the *Handbook of Writing Research*
- The Rand Reading Study Group Report
- Documents from the *American Educational Research Journal*, *Review of Educational Research*, and *Reading Research Quarterly*
- Chapters from four textbooks on the development of adolescent literacy

The ALRDT met for 15 days between June 2006 and 2007. During this time, team members individually read 38 reports, articles, and chapters on adolescent literacy and how to support school and/or district efforts. During or after their reading, team members analyzed the information from each document and recorded their responses on a structured response sheet. The questions were designed to help readers think about information the authors thought was important (author-based meaning); about how this information applied to schools they were working with in Iowa; and to identify other sources of information for study. After thinking about the

content of each document and their local settings, each team member recorded recommendations for the following role groups: teachers, school-based administrators, district-office staff and school board members, AEA staff, and DE staff. These individual responses were used during team workdays as team members worked in small groups to discuss and write collective responses.

The focus of the collective inquiry was “*How do we accelerate adolescent literacy?*” The question wording was intended to convey movement forward of the whole student population, whether they were gifted, proficient, or struggling readers and writers. Documents were studied that specifically addressed struggling readers, learning disabled students, and English language learners, but the team did not focus on severely disabled students who comprise one to three percent of the student population.

Across the 15 workdays, the following instructional pattern was used for studying the knowledge base: During the team workdays, selected documents and the rationale for reading them were introduced; followed by individual reading, reflecting, and writing—most often done as homework outside the team workday. This was followed by small group discussions and writing-to-learn activities, and concluded with large group discussions on each document.

The instructional pattern for studying the documents was designed to deepen knowledge and understanding of the content and help team members consider its relevance to their needs as representatives of the above-mentioned role groups who are responsible for supporting the education of Iowa students. Another reason for the design was to model inquiry and group investigation, which is one of the most complex cooperative learning models. And, finally, the instructional design applied several major components of what is currently known about effective learning and literacy development:

- Reading with a purpose
- Interacting with and learning from text
- Using text and discussion to generate additional questions
- Variety in types of information and levels of complexity of the materials read (not all research articles or research handbook chapters, some easy-to-follow-and-apply documents written by scholar/researchers were included)
- Using discussion as a learning tool
- Using writing to learn

### **Outcome Attainment**

Three outcomes were announced when the ALRDT was formed:

1. To form a cadre of people who will serve as a resource to local and area education agency staff with knowledge of adolescent literacy
2. To develop a proposed plan for building capacity statewide in adolescent literacy
3. To identify potential resource materials needed to support capacity building efforts

Almost all team members indicate that they have extended their knowledge base extensively in adolescent literacy. Two professional development series are being prepared for use by AEA and LEA staff. Many quality resources have been identified and studied, and the number continues to grow.

The following are excerpts from team members' reflections about the "year's work as a member of the Adolescent Literacy Research and Development Team:"

This has been the most beneficial committee I have ever worked on. It has provided me with valuable research, a network of professionals who are willing to reach out and help others, and helped me to take a look at curriculum with an open mind.

*Beverly Hall, Secondary Literacy Strategist, Council Bluffs Community School District*

The articles we read gave me in-depth insight into where writing is and isn't happening, into what works and doesn't work, and the components needed in a good writing curriculum.

The discussions we shared during our meetings were models of what needs to be occurring in classrooms between teachers and students.

*Dixie Opperman, Consultant, AEA 1*

This work has deepened my understanding about literacy in general and of adolescent literacy in depth. The work has been both incredible and exhaustive at once. I have used my deepened knowledge to assist Storm Lake Middle School in its implementation of CORI and the nine principles of the CORI framework which apply so much of the information from the research base.

*Barb Schons, Consultant, AEA 8*

I have always had a concern at the secondary level for special education instruction. What I typically see is more tutorial assistance. I see a lack of explicit strategy instruction for our special ed. kids and now realize that it often does not occur in the general ed. setting either. I am hoping to be able to go back to the schools



I work with and help them understand that what is good instruction for special ed kids and struggling readers is good for all kids.

*Nancie Andreasen, School Psychologist, AEA 1*

The discussions about research have been valuable.

*Sara Youngers, Consultant, NWAEA*

I have greatly expanded and deepened my knowledge base. I recognize authors and make connections on a more informed level. I also see ways to share this research with teachers and leadership teams in schools.

I have learned more through this process by learning with this process. I feel I am better prepared to use inquiry with a teaching staff.

*Jude Richardson, Consultant, AEA 11*

The research and group investigation process that encompassed so much of our [meeting] time over these many months was amazing. I have nothing to compare it to . . . but I always came to DSM knowing it would be hard work over two days and I always left exhausted—but also excited.

*Becky Williams, Consultant, AEA 267*

My very limited Reading-Language Arts background has been greatly enhanced by participation in this group. I liked the process used and the involvement of DE/AEA/ and LEA members.

*Mark Polich, Principal, Garwin Middle School*

I've loved the coverage and research we have read regarding writing. (And having Dr. Troia here is especially awesome! Thanks.) It has been extremely thorough and will aid me in preparing my work with districts this very year!

I feel we shortchanged, due to time, the study of discussion. That may have been due to the body of research. However, I do think we need to study this more—it is often used in adolescent literacy learning, in all content areas.

It is difficult for me to say which component of this journey has been most beneficial—the research, the reflections, the group processing, the synthesis—but all knitted together they have afforded me a body of learning that I wouldn't trade.

*Margie Ortgiesen, AEA 267*

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## The Role of Reading Volume and Learning from Reading in Accelerating Adolescent Literacy

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For many years, most curriculum documents and reports focusing on literacy advocated developing a lifelong reading habit in students. Many educators and citizens who read or reviewed those documents probably envisioned a course of study beginning at school entry and proceeding through graduation that would develop adults who choose to read, learn through reading, and read widely for a variety of purposes.

This is still the case, whether one reviews the *New Standards* (1997), *Content Knowledge: A Compendium of Standards and Benchmarks for K–12 Education* (Kendall & Marzano, 1997), or Iowa’s *Core Curriculum* (Iowa Department of Education [IDE], 2006). Depending on the policies of the day, the text may focus more or less on the use of literacy to negotiate the world after school or as an essential attribute for success in school, but common performance indicators for literacy curriculum at the secondary level will include items such as these from Iowa’s *Core Curriculum for Iowa High Schools* (p. 28; emphasis added):

- **Independently reads a significant number of books and texts each year.** This reading should include both fiction and nonfiction in a variety of genres.
- **Reads for a variety of purposes** and across content areas.

However, there are differences today that have promise for positive effects on student performance pre-kindergarten through grade twelve and beyond. These differences may be less familiar to secondary educators because during the last ten years so much attention—assessment, staff

development, publications, policies, as well as additional resources—has focused on instruction and student performance in kindergarten through grade three.

This section provides a review of reading volume and print exposure on the development of literacy, and especially on its role in grades four and above. To further facilitate communication with writers and readers, here are definitions of a few key terms:

*Reading Volume* refers to the quantity of materials that students read and to the amount of time students spend reading. How much students read provides data on amount of practice with reading skills and strategies and data on whether students are availing themselves of opportunities to learn through reading.

*Learning from Reading* refers to the acquisition of information that is possible from interacting with text. As one reads, one learns about how language works, how the world works, and about the perspectives and emotions of others. Through exposure to and generation of recorded texts, one's potential to learn from reading is infinite.

*Access to Print* refers to opportunities for print exposure, especially to the amount of printed materials and other text that is immediately available to students.

*Read-Alouds* refer to the act of teachers or other adults reading aloud to students. The type of Read-Aloud addressed here will be primarily Content Area Read-Alouds that have been selected to address a curriculum concept that is currently being taught or will soon be taught.

### **What is the Role of Reading Volume in Literacy Development?**

Reading volume—the amount that students read in and out of school—significantly affects vocabulary development, reading comprehension, general knowledge of the world, overall verbal ability, and academic achievement (Cunningham, 2005; Stanovich, Cunningham, & West, 1998). While there are few experimental studies demonstrating causal effects for quantity of reading on reading development, there are many studies indicating strong correlations between amount of reading and reading growth (e.g., Cipielewski & Stanovich, 1992; for reviews see Allington, 2001; Anderson, 1996; Cunningham, 2005; Krashen, 2004).

Of course, reading volume, attitude toward reading, and reading achievement are all interconnected, and the amount of reading by individual students differs dramatically from one student to the next. However, in general, students' attitudes toward assigned reading and reading for fun become negative gradually, but steadily, across the elementary years until—as McKenna, Ellsworth, and Kear (1995) report from their study of 18,185

students—by sixth grade, students are largely indifferent to reading. Because time spent reading is tied to reading and writing competence, many students who do not read in their free time often eventually lose academic ground even if they are not initially remedial readers (Anderson, Wilson, & Fielding, 1988; Mullis, Campbell, & Farstrup, 1993; Stanovich, 1986).

The amount of time students spend reading silently is one of the strongest predictors of reading comprehension in general and vocabulary development in particular. While individual students vary widely in how many words they learn in a single year, it is estimated that the average student adds around 3,000 words during each school year between third and twelfth grades (Anderson & Nagy, 1992; Anglin, 1993; Nagy & Anderson, 1984; Nagy, Anderson, & Herman, 1987; White, Graves, & Slater, 1990). No directly taught vocabulary program alone can achieve this rate of learning. Instead, students' word knowledge expands as they read widely, acquiring most of their vocabulary through context and repeated exposure to words and the concepts they represent.

A major reason for this powerful relationship between wide reading and vocabulary development is that written language is much more likely to contain the vocabulary, text structures, and complex sentence patterns that are so characteristic of school language.

**Table 7.1**

Selected Statistics for Major Sources of Spoken and Written Language

	Rank of Median Words	Rare Words per 1000
<b>I. Printed texts</b>		
Abstracts of scientific articles	4389	128.0
Newspapers	1690	68.3
Popular Magazines	1399	35.7
Adult books	1058	52.7
Comic books	867	53.5
Children's books	627	30.9
Preschool books	578	16.3
<b>II. Television texts</b>		
Popular prime-time adult shows	490	22.7
Popular prime-time children's shows	543	20.2
Cartoon shows	598	30.8
Mr. Rogers and Sesame Street	413	2.0
<b>III. Adult speech</b>		
Expert witness testimony	1008	28.4
College graduates to friends, spouses	496	17.3

Note: Adapted from Hayes & Ahrens (1988) in Cunningham & Stanovich (1998).

Hayes and Ahrens (1988) analyzed the distribution of words used in several categories of oral and written language according to their frequency of occurrence in the English language. In general, they found that speech contained far fewer rare or unique words than written language. For example, in the categories of discourse they analyzed, only courtroom testimony had more rare words than childrens' books; even preschool books had more rare words than conversations between college graduates speaking to friends or their spouse. (See Table 7.1.)

*Acquiring words while reading.* What is the relationship between wide reading and building sight vocabulary? This vocabulary acquisition process is often called "incidental word learning while reading." It refers 1) to moving a word into one's sight vocabulary through a single print exposure while reading and through multiple exposures to the word while reading connected text, and 2) to increasing one's depth of knowledge about word meaning through multiple exposures in different texts and from different perspectives. Some sources say the probability of moving an unfamiliar word into one's sight vocabulary from a single exposure while reading is around 5% (Nagy et al., 1987). Other sources say it's around 15% (Swanborn & de Glopper, 1999). However, to build new concepts and integrate a word into one's own speaking and writing vocabulary generally requires multiple exposures. This is one more reason why wide reading is so critical to content-area learning.

*In learning words while reading,* better readers have the advantage. Better readers read more than less accomplished readers, thus developing their vocabularies more rapidly and enjoying more intrinsic rewards from the act of reading, which encourages them to read even more. Students who do not read well read less, and with less enjoyment, limiting their development of sight vocabulary and their opportunities for reading practice. This further constricts their progress in reading and reduces their ability to use school texts in a continuous downward spiral as they advance from one grade level to the next and into ever more complex content area reading materials. The popular label for this advantage/disadvantage is the "Matthew effect," from the Gospel according to Matthew: "For unto everyone that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath" (25:29). Keith Stanovich has studied these reciprocal processes extensively and has clarified how reading volume has a "rich get richer" effect on reading development. (1986; 2000, p.184).

In studies of fourth, fifth, and sixth grade students (Cunningham & Stanovich, 1991), high school students (11<sup>th</sup> grade, Cunningham & Stanovich, 1997), and college students (Stanovich & Cunningham, 1992, 1993), the amount of independent reading was found to contribute significantly to vocabulary knowledge. In the 1993 study, the authors

accumulated even more evidence that reading volume contributes to domain knowledge among older students. See Cunningham (2005) for a more in-depth analysis and explanation of these findings.

There is relatively widespread agreement that a large storehouse of sight words and their meanings are acquired from simply reading extensively (Nagy et al., 1987; Nagy, Herman, & Anderson, 1985; Stahl, 1999; Stanovich, 2000; Sternberg, 1987; Swanborn & de Glopper, 1999). From third grade on, amount of reading is the “major determinant of vocabulary growth” (Nagy & Anderson, 1984, p. 327). Just reading words in context builds sight vocabulary and knowledge of word meanings.

*The effects of reading on writing quality.* Some studies indicate that students learn the syntax of their language and their grammar and usage patterns from regular exposure to that language through conversations, being read to, and wide independent reading. Elley's (1997) question to readers is “Do children learn their grammar incidentally?” One of the most relevant studies in response to this question was conducted in New Zealand by Elley and his colleagues. Eight matched classes of twelve- year-olds were divided into three groups for one of three approaches to English instruction. They participated in this approach to instruction for three successive years: one group had traditional grammar and usage instruction; one had transformational grammar; and one group, instead of spending time on grammatical exercises and application of rules, gave “the same amount of time to extra reading and writing” (Elley, p. 11, studies conducted in 1976 and 1979). There were no differences in reading, writing, or editing skills among the three groups after three years of instruction. However, the grammar groups had less positive attitudes toward English. Elley cites a number of other studies of high school and college students and of English language learners in which students in English classes who spent much of their time reading books and being read to or who were in classes that focused on reading enrichment out-performed the control groups in quality of writing and in skillful use of language structures for writing.

Elley (1997) relates these findings to those of Hillocks (1986) who came to the same conclusion: the systematic teaching of grammar has no value in improving students' writing. Today, he would probably include the new synthesis of research, *Writing Next: Effective Strategies to Improve Writing of Adolescents in Middle and High Schools* (Graham & Perin, 2007). These authors found that grammar instruction that included the explicit and systematic teaching of parts of speech and sentence structures had a statistically significant negative effect on writing quality for students across all ability levels. Several of the studies analyzed in the *Writing Next* synthesis examined the effects of explicit grammar instruction on low-achieving



writers; these studies also yielded negative effect sizes for traditional grammar instruction.

*The relationship between wide reading and fluency.* Moving from the effects of wide reading on learning and applying the structure of language while writing to its effects on reading fluency, some scholars question whether the major problem of readers lacking fluency is one of limited reading practice (Allington, 2006; Guthrie, 2004; Kuhn, 2005a). Kuhn and Stahl's (2003) review of developmental and remedial instructional practices that increase reading fluency indicate that repeatedly reading the same text does increase fluency, yet they speculated that it might be more a result of additional practice in reading than practice in re-reading the same text. In Kuhn's (2005a; 2005b) comparative study of repeated reading and wide independent reading, she found that *extensive reading of texts matched to students' reading level produced comprehension gains that repeated reading did not, while also improving fluency*. Also, students who struggle with reading read less, preventing the development of a basic sight vocabulary. This limited sight word vocabulary is a common characteristic of disabled readers after the initial learning-to-read phase (Torgesen & Hudson, 2006).

With that said, how much are students reading and how are responsible parties supporting this vital activity?

### **What Is the Current Status of Reading Volume, Access to Print, Content Area Read-Alouds, and Opportunity to Read for Students in Grades Four through Twelve?**

Consider how much your students are reading in and out of school, the extensiveness of classroom collections, and the breadth of materials in school libraries. Also consider the degree to which teachers in grades four through twelve model literacy and life-long learning by sharing content area information via brief Read-Alouds to their students.

#### ***Reading Volume: How Much Are Students Reading?***

If your school or district has a local initiative to increase the amount of reading students do, such as Just Read, you may well have collected data over time that can inform you about reading volume and its effects on student performance. The major published studies that address reading volume have two common findings: students who read more have higher reading achievement results and most students report very little reading in or out of school.

Anderson et al. studied how much reading fifth graders did outside of school. Students kept logs documenting how much they read each day. On average, students spent about ten minutes a day reading books. The range

in amount of reading as it related to achievement percentiles looked like this:

<u>Achievement Percentile</u>	<u>Minutes Read Per Day</u>	<u>Words Per Year</u>
10 <sup>th</sup>	1.6	51,000
50 <sup>th</sup>	12.9	601,000
90 <sup>th</sup>	40.4	2,357,000

Taylor, Frye, and Maruyama (1990) examined the reading habits of 195 fifth and sixth grade students. Students kept daily reading logs from January through May. These students averaged 16 minutes per day of reading during their 50-minute reading class and 15 minutes of at-home reading. The range of time allowed for independent reading varied from 9.6 to 18.7 minutes per 50-minute class period, with students in some classrooms regularly reading more and others regularly reading less. In this study, the amount of at-home reading was not significantly correlated with reading achievement; however, the amount of time students spent reading at school contributed significantly (.62) to their individual reading achievement growth.

Foertsch (1992) used data from the *National Assessment of Educational Progress (NAEP)* to analyze students' reading habits and their effects on reading performance. The sample included 38,000 students in grades four, eight, and twelve in both public and private schools. Similar to Anderson, Taylor, and their colleagues, Foertsch's findings indicated that many students were reading very little. Fewer than half of all students read daily outside of school; with 30% of fourth, eighth, and twelfth graders reporting never reading anything, even monthly. The amount of reading inside and outside of school was positively correlated with student's reading performance on the *NAEP* tests: students who read more scored higher; students who read less, scored lower. Of no surprise, but worth noting in terms of how literacy is developed, students who reported having more books, print resources, and support for reading in the home environment also had higher reading achievement.

From 1989 through 1993, Joyce and Wolf (1996) studied amount of at-home independent reading in a school district with 11 schools. Students kept daily logs, which they submitted once a week, on the number of books they read (along with page numbers for longer books). Students could read books of any length and genre. Schools had the option of also tracking numbers of minutes read, and some did, but district administrators and school leaders were especially concerned with how much coherent print materials students were choosing to read outside of school. They believed that students could learn much through simply reading extended connected text that had a story or message (the setting was a Department of Defense

school system located outside the U.S.). The baseline data collection period was 14 weeks. Students in grades four, five, and six averaged slightly less than one book every four weeks. At the secondary level, 48% of the students reported reading no books during the 14-week period, with the other 52% averaging fewer than two books. However, 5% of the secondary students who were reading books outside of school read seven or more during the baseline period.

The next source on reading volume to be addressed here is from the Organisation for Economic Cooperation and Development (OECD) Programme for International Student Assessment (PISA). In *Reading for Change: Performance and Engagement Across Countries—Results from PISA 2000*, Kirsch and his colleagues (2002) analyzed data from 265,000 students in 32 countries, including the United States. The sample consisted of 15-year olds who were still in school. This age range (15 years, 3 months; through 16 years, 2 months) was chosen because most students were nearing the end of compulsory schooling. Individual student demographic, home environment, and school data were collected. The assessment instrument used included four types of reading tasks (similar to those in the U.S. NAEP reading assessments) yielding scores on retrieving information, interpreting information, and reflecting on texts. Students also completed questionnaires to measure reading engagement—comprised of items addressing both reading practices and reading attitudes: Students were asked to indicate how much time they spent reading (five descriptors from “I do not read for enjoyment” to “More than two hours a day”); they were asked to indicate the kinds of materials they choose to read; and they were asked to complete a nine-item reading attitude scale.

Reader profiles were developed using cluster analysis to identify patterns of frequency of reading and breadth/diversity of materials read. Amount of reading was coded *frequent* if students indicated they read a material “several times a month” or “several times a week,” *moderate* if students indicated they read it “a few times a year” or “once a month,” and *no reading* if students indicated “never” or “hardly ever.”

*Cluster 1* students read the least. However, 38% of this group did report reading magazines frequently; 13% reported reading comics frequently; 12% fiction; and 6% nonfiction. Of the U.S. students participating, 28% were in this cluster.

*Cluster 2* students frequently read newspapers (89%) and magazines (70%). They rarely read any books (3% report frequently reading fiction or nonfiction books) or comics. Of the U.S. students participating, 32% were in this cluster.

*Cluster 3* students frequently read comics (89%), magazines (85%), and

newspapers (81%). They were moderate readers of short fiction and nonfiction texts. Of the U.S. students participating, 11% were in this cluster.

*Cluster 4* students read the most. They frequently read newspapers (76%), magazines (70%), fiction books (72%), and nonfiction books (48%). Of the U.S. students participating, 29% were in this cluster.

Similar to other studies of reading volume and its relationship to reading proficiency, students who read the most attained higher scores, for these 15-year-olds, those students in Cluster 4 scored an average of one proficiency level higher (72 points higher on the scale) than students in the other clusters.

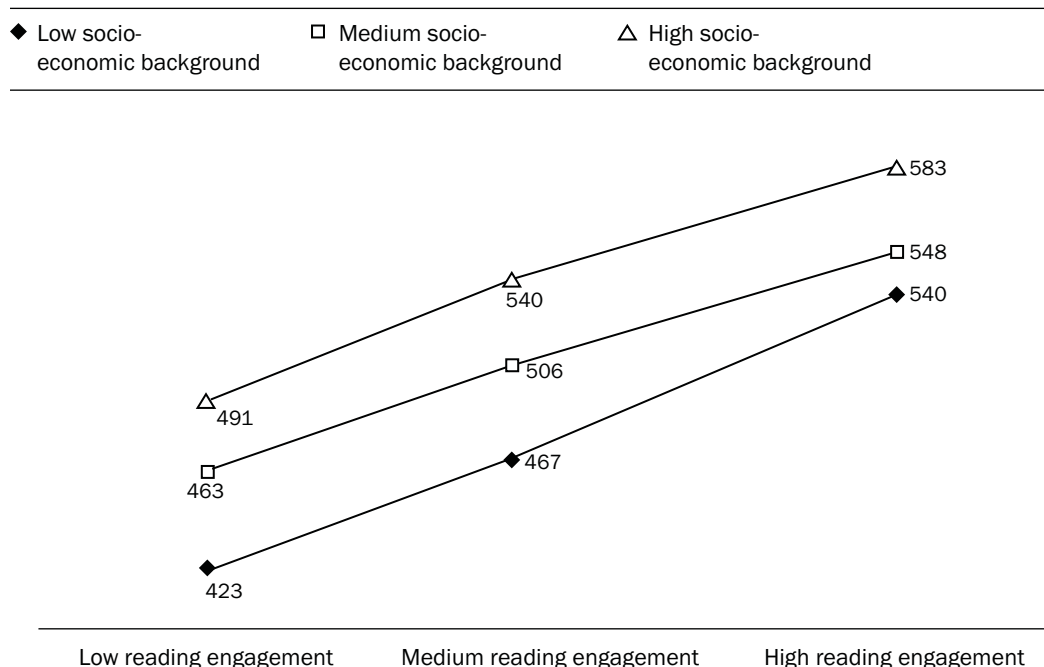
*Engagement in reading—extensive reading of a variety of materials—and SES.* Socio-economic status (SES) is a major predictor of academic performance in U.S. schools (Sirin, 2005). (Appendix Items 1, 2, and 3 on pages 33–41 indicate the relationship between SES and reading performance in Iowa students.)

Table 7.2 shows how effective reading engagement can surmount the obstacle of low socioeconomic status. Because of the effect SES has on literacy and the sample size in the PISA study (265,000 students from 32 countries), it is important to read part of the authors' summary of their response to this question: "Can engagement in reading compensate for socio-economic background?"

Students who have parents with the highest occupational status and who are highly engaged in reading obtain the best average scores on the combined reading literacy scale (583). This is more than one proficiency level or 0.83 of a standard deviation above the OECD average. And students who have parents with the lowest occupational status and who are the least engaged in reading obtain the lowest average score (423). This score is one proficiency level below the OECD average and more than one and one-half standard deviations below the average of students in the high-engagement, high-status group. *More importantly from our perspective, 15-year-old students who are highly engaged readers and whose parents have the lowest occupational status achieve significantly higher average reading scores (540) than students whose parents have the highest occupational status but who are poorly engaged in reading (491).* The difference in their average scores is more than half a standard deviation. And these highly engaged students whose parents have low occupational status perform as well on average as those students who are in the middle engagement group but whose parents have high-status occupations.

**Table 7.2**

Reading literacy performance and socioeconomic background by level of reading engagement



Source: OECD PISA database, 2001, Table 5.9

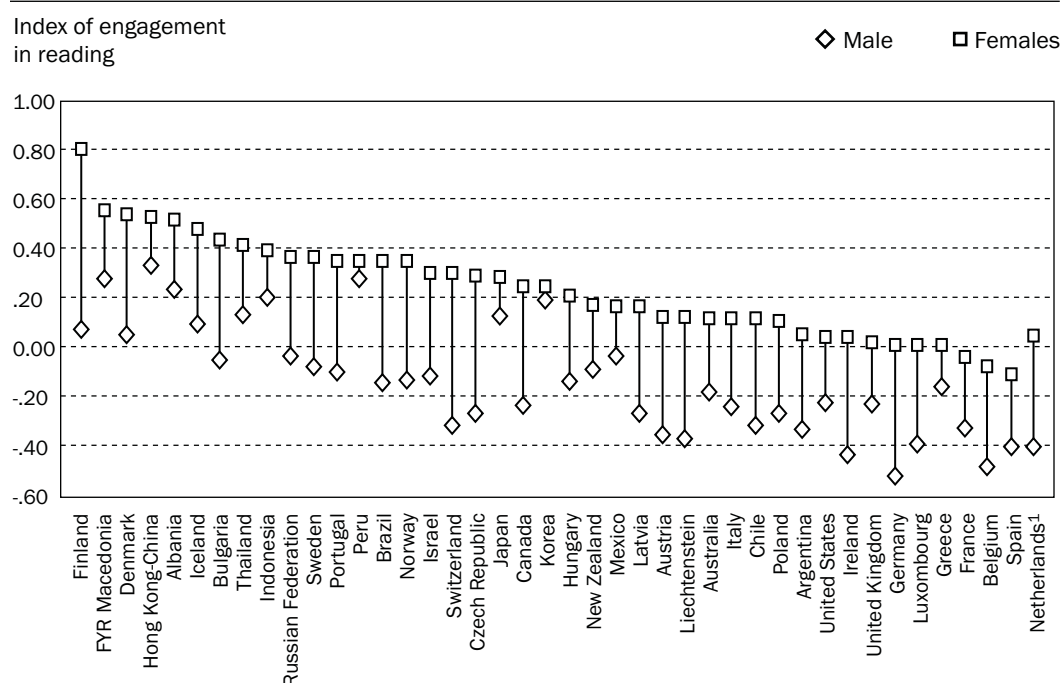
All the students who are highly engaged in reading achieve reading literacy scores that are significantly above the international mean, whatever their family background. Conversely, students who are poorly engaged in reading achieve scores below the international mean, regardless of their parents' occupational status. Within each occupational status group, students who are among the least engaged readers attain average scores ranging from 85 to 117 points lower than those who are in the highly engaged reading group on the combined reading scale, the largest difference being seen among students from the low occupational status group (Kirsch et al., 2002, pp. 120–121).

*Reading volume and gender.* In a follow-up report, *Literacy Skills for the World of Tomorrow—Further Results from PISA 2000*, (Unesco, 2003) authors continued to analyze gender differences in terms of amount of time engaged in reading, attitudes toward reading, and reading performance on the tests. In terms of time, or amount of reading for fun, 46% of male students indicated they “read only if they have to,” compared to 26% of female students.

For the United States, more than 50% of the males reported that they did not read for enjoyment. However, about 20% of male students and 30% of the females in the sample reported reading more than 30 minutes a day for enjoyment. Gender differences in favor of females occurred in attitudes toward reading, time spent reading, and performance in reading. (See Table 7.3 for gender differences in engagement in reading in 42 OECD and non-OECD countries.) Looking just at performance on the assessment measure, while male and female students were represented in each of the five proficiency levels, more females are in the higher proficiency levels and more males are in the lower proficiency levels. For the U.S., about 12% of females scored at or below Level 1, while 22% of males scores at or below Level 1.

**Table 7.3**

Gender differences in engagement in reading



1. Response rate is too low to ensure comparability (see Annex A3).

Note: For the definition of indices, see Annex A1.

Source: OECD PISA database, 2003. Table 4.4.

*Reading volume data from NAEP.* Results from the NAEP in Reading for 1984, 1999, and 2004 (Perie, Moran, Lutkus, & Tirre, 2005) indicate that students in grades four, eight, and twelve who read five or fewer pages per day in school or for homework had the lowest reading proficiency scores. Looking outside of school to whether students chose to read for fun,

students at all three grade levels who reported reading for fun “almost every day” or “once or twice a week” had higher average scores than those who reported reading “never or hardly ever.”

Perie et al. analyzed the 1984, 1999, and 2004 data to determine if there were trends in the amount of reported reading across the three decades. Students in fourth and eighth grades indicate reading significantly more in school and for homework in 2004 than they did in 1984 or 1999. The data for twelfth graders indicate little change for the 20-year period in how much seniors were reading in school and for assigned homework:

<u>Reading 16 or More Pages a Day</u>	<u>Grade 4</u>	<u>Grade 8</u>	<u>Grade 12</u>
1984	26%	22%	35%
1999	33%	29%	36%
2004	40%	35%	38%

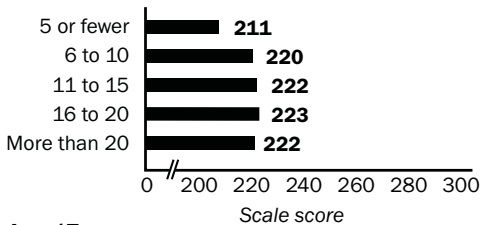
Focusing just on the 2004 *NAEP* data, in which more than 11,000 students were assessed at each of the three grade levels: 21–25% of students in these three grades report reading five or fewer pages per day. Looking at reading by choice, 54% of fourth graders reported reading for fun almost every day, while only 30% of eighth graders and 22% of twelfth graders reported this level of reading frequency.

**Table 7.4**

Average reading scale scores for students age 9, 13, and 17, by pages read per day in school and for homework in 2004.

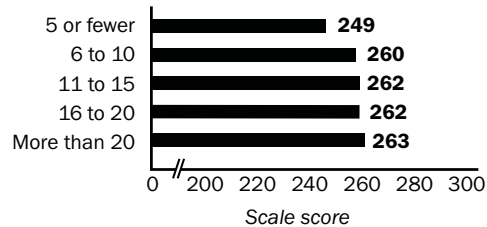
**Age 9**

*Pages read per day*



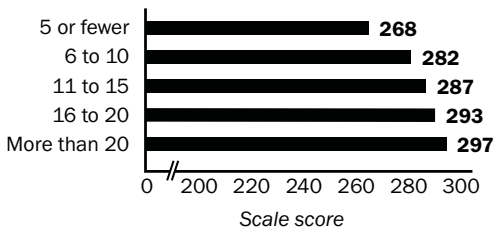
**Age 13**

*Pages read per day*



**Age 17**

*Pages read per day*



SOURCE: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2004 Long-Term Trend Reading Assessment.



Of note is that students in grades four and eight who reported reading at least six to ten pages a day in school and for homework had almost identical scale scores as students who read 11 to more than 20 pages a day in school and for homework. If students read five or fewer pages per day, their reading proficiency scores are significantly lower, especially in twelfth grade.

In concluding the overview of the current state of reading volume in and out of school, we ask you to think about how students in your school compare to the populations described above in developing a life-long reading habit. How much are students reading? Especially consider how much special needs, English language learners, and other students who are struggling academically are reading. Have goals been set by faculty and students to accelerate learning from reading and taking time to read? As cited in Allington (2001), neither Title I nor Special Education programs

reliably increased the volume of reading students engaged in... This failure may explain the limited impact that both programs have had on accelerating the reading development of the children served. (p. 32)

### ***What Do We Know about Increasing Reading Volume and Learning from Reading?***

This document has reviewed studies and reports on reading volume and how frequently students are taking the opportunity to learn through reading and reading for fun. What are educational organizations and responsible parties doing in grades four through twelve to support students' independent reading and learning from reading? We will focus on four areas of action that scholars recommend as scaffolds for increasing reading volume and learning from reading: curriculum content, access to print, opportunity to learn through teacher Read-Alouds, and opportunity for independent reading.

*Curriculum.* Highly valued knowledge or action critical to educational success and for which a school or district has responsibility for developing needs to be clearly present in local and state curriculum documents. The two statements from Iowa's *Core Curriculum* at the beginning of this section specify that students in high schools in Iowa need to read a significant number of fiction and nonfiction books and texts each year, read for multiple purposes, and read across content areas. These actions have been identified as part of the "essential concept or skill set" for developing literacy at the secondary level in Iowa. How are they represented in your local curriculum documents? Are they reflected in content area emphasis for students in grades four through twelve? Or, are they still "stuck" primarily in the language arts, reading, and English classes? How are teachers and administrators studying students' progress in using wide reading to learn vocabulary, form concepts, and develop a habit of reading?



*Access to print.* Textbooks do not generally provide enough access to print. Textbook publishers include very large amounts of information so the textbooks will be eligible for adoption in many states. Additionally, the reading level of many of these textbooks and the reading levels of students aren't always aligned. Also, students aren't always interested in reading textbooks. Adolescents' reading and learning in the content areas increase when they read the kinds of materials adult readers do: a wide range of text, fiction and nonfiction, articles and books, paper and electronic, and informational and poetic materials in a wide range of genres. Reading this broad mixture develops literate citizens and aids learning in all subjects—English, math, history, science, art, foreign language, health, and consumer science.

Within each content area and each classroom, how available are the “diverse texts” recommended in *Reading Next: A Vision for Action and Research in Middle and High School Literacy* (Biancarosa & Snow, 2004)? Do the books available in each classroom represent a wide range of reading difficulty levels and a wide range of topics? Beyond the appropriate grade-level textbooks that may be available in content area classrooms, students need “books available from a wide range of levels on the same topic” (Biancarosa & Snow, p. 18).

Textbooks, of course, are the primary source of information in most secondary classrooms; estimates suggest that 75–90% of teachers in the United States use textbooks almost exclusively (Palmer & Stewart, 1997). They provide coverage of content that may well appear on college entrance exams. Yet, many of today's textbooks cover too many topics without developing any of them well. While most textbooks present the key ideas described in national and state standards and curriculum documents, few textbooks help students learn the ideas or help teachers teach them well (Roseman, Kulm, & Shuttleworth, 2001).

Most textbooks are best used as the reference books that they are. The most effective teachers (in terms of student performance and engagement with reading) infuse their curriculum and instruction with many text sources—print and electronic—including authentic, real-world nonfiction; expository, informational, and persuasive materials such as newspapers, magazines, trade books, biographies, reference books, series books; and fiction texts such as short stories, graphic novels, and comic books. Based on their knowledge of their students and their content area expertise, these teachers provide materials that span a wide range of reading levels and interests. (See Guthrie & Humenick, 2004; Langer, 2001; and Torgesen et al., 2007, for more on the role of interesting and diverse texts at a range of reading levels as a necessary component of content area literacy programs that yield increased student performance.)

As widely used as textbooks are in our country's middle and high school classrooms, many students choose not to read them. In a study on the use of texts in science classes, researchers interviewed a mix of students in general and college preparatory science classes (Hynd, McNish, Guzzetti, Lay, & Flower, 1994). Various students' comments revealed the beliefs that textbooks need fuller explanations and more relevant examples, that textbooks assume too much about students' knowledge, and that textbooks should be better organized. When eleventh- and twelfth-grade students in physics classes were asked about the use of their textbooks, one student in the course said flatly, "I don't mess with the textbook. It's confusing." Another replied, "I should be telling you that the text is the best way to learn information. I learn by reading, and I read a lot. But I just can't understand this textbook. It's way above my head" (Hynd et al., p. 208). Many of these students also commented that they would be more comfortable with textbooks if they were taught how to read them.

Approximately 25–40% of students are reading, or attempting to read, textbooks that are well beyond their reading levels (Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999). For struggling readers or English language learners, the gap between readers and textbooks can be as great as three to five years. The mismatch between students' reading level and the levels at which the textbooks are written, coupled with students' lack of prior knowledge about content area concepts, can create a situation where the textbook becomes little more than furniture. Even for students who are reading at grade level and above, many textbooks do not provide adequate information to enable students to build concepts and understand the principles that shape the discipline. What do effective secondary teachers do to overcome this challenge? How do they accelerate learning from text in their content area?

More secondary teachers are beginning to move beyond the exclusive use of textbooks and incorporate trade books, electronic texts, and other authentic alternatives to textbooks in their classrooms. They look for trade books that are rich in content and that complement their textbooks. Learning with trade books involves exposure to many different genres, all of which are potential sources of information for the students. When teachers use textbooks and trade books together, they help students think more critically about content from multiple perspectives.

When carefully selected, trade books provide an effective complement to textbooks in virtually any subject. They provide depth, considerate and accurate information, and motivation for reading, at a variety of reading levels. Trade books can fill the need for story and provide the emotional dimension lacking in textbooks. Additionally, nonfiction trade books are generally written and organized so that information is easier to remember and more accessible. The authors speak to students personally through

informal, engaging writing styles, and their clear, reader-friendly explanations of scientific principles or processes can be extremely helpful to students. Not surprisingly, for many students, and especially boys, nonfiction is the literature of choice for out-of-school reading. Many students report a fascination with facts and a “need to know” attitude about information that drives their reading choices. However, despite their quality, non-fiction trade books are still a largely untapped resource with great potential for motivating reading in the content areas (Vacca & Vacca, 2004).

All students should have access to books. Perhaps it is not surprising that schools with large numbers of poor students often have inadequate school libraries and nonexistent classroom libraries. For example, students in schools that are located in low socio-economic neighborhoods have about 50% fewer books in their schools than students going to schools located in wealthy communities (McQuillan, 1998). These poorer schools serve the students who are least likely to live in literate home environments and least likely to have access to public libraries. These are also the schools that should have the most liberal library policies for loaning books to students and their families. Having wonderful books is of little use if access is limited. One simple action to begin closing the socioeconomic status (SES) achievement gap is to ensure that all schools have school and classroom libraries with large collections of trade books, informational texts, picture books, multicultural literature, poetry, and magazines, as well as easy access to electronic texts.

To think beyond supporting learning in the content areas to helping students establish a habit of reading for pleasure, think about whether your school or classroom libraries include materials students would select for recreational reading. Deciding what kinds of materials to provide in classroom and school collections means including students’ preferences as one of the factors in selecting materials. Students’ personal interests in topics and preferences for genre often do not match what is available in school/classroom collections (Worthy, Moorman, & Turner, 1999). This mismatch may be most detrimental for reluctant readers and males (Baines, 1994; Smith & Wilhelm, 2004; Worthy et al.). The findings of a study by Thomson conclude that there is an ever-increasing gap between students’ preferences and the materials that schools provide and recommend (cited in Worthy et al.). Many of the reading materials that students prefer to read have not been purchased due to improper language or subject matter. They are often viewed as “light” reading materials, and therefore not considered appropriate for literature or other content classes.

Think about whether students can easily access materials from the Internet. While guidelines and explicit instruction on Internet use would be a prerequisite, access to print can be expanded through technology and use of

the Internet. Students in Iowa have access to a wide range of written material through the eight subscription databases in IowaAEAOnline. One of the databases, EBSCOHost, provides full text for over 500 popular magazines and 25 newspapers. Helping students access both content area reading materials and recreational reading materials via the Internet also provides an opportunity for teachers to help students become skilled in gathering and evaluating multiple online resources.

The teaching and learning standards of many professional organizations support the principle of using multiple resources for reading, analyzing, comparing, and locating information in each content domain (National Council for the Social Studies, 1994; National Council of Teachers of English & International Reading Association, 1996; National Council of Teachers of Mathematics, 2000; National Research Council & National Science Teacher's Association, 1996). For example: classroom collections in the high school automotive class might include manuals, magazines, simulations on DVDs, large charts and diagrams, and reference books for use while engaged in a project on assembling motor engines (Sturtevant, Boyd, Brozo, Hinchman, Moore, & Alvermann, 2006). The classroom library of a physics class studying the properties of waves might include a list of Web sites; a list of online journal articles; a set of nonfiction trade books—including picture books—on various concepts related to wave properties; simulations on DVD; a variety of reference books at different levels of reading difficulty; and alternative textbooks. However, according to Ivey (quoted in Sturtevant et al., p. 55), *"I am afraid that in most secondary classrooms, the fit between available reading materials and adolescent learners does not even facilitate compliance with reading, much less engagement."*

Allington (2001), while reminding readers that many exemplary teachers whose students read more and at higher levels had classroom collections including upwards of 1,500 books, recommends at least 500 different books in each classroom, about evenly split between narratives and informational books; and between books written on or near grade level and books that are below grade level. Fisher, Frey, and Williams (2004), who worked closely with Hoover High School in San Diego and helped facilitate the move in average reading performance from 4.3 to 7.2 on standardized reading tests, indicate that several hundred dollars a year was allocated to each teacher to support a well-stocked classroom library. Other secondary schools "beating" the norm allocate thousands of dollars each year to build shared classroom collections that are diverse in topics and difficulty, but also match the state's content standards (Ivey, 2002). In the settings that Ivey and Fisher describe, these allocations are above the expenditures for the school library and above the expenditures for instructional materials and textbooks (Ivey & Fisher, 2006).

*Opportunity to Learn from Read-Alouds.* Do fourth and twelfth grade teachers in your school or district read curriculum-relevant information aloud to students daily? There is increasing awareness of the role that Read-Alouds can play in developing fluency, vocabulary, knowledge of the world, and content area concepts. One of the most published quotations from the 1985 Report of the Commission on Reading, *Becoming a Nation of Readers*, is “The single most important activity for building the knowledge required for eventual success in reading is reading aloud to children” (Anderson, Hiebert, Scott, & Wilkinson, 1985, p. 23). What is exciting today is the increasing realization that sharing high-quality nonfiction text with students at all ages supports learning. For example, Stahl’s (1999) conclusion that reading aloud to older students helps build vocabulary knowledge and the International Reading Association’s President’s Message for August/September 2007, in which Linda Gambrell reminds readers that: “As teachers, we encourage students to read widely when we introduce lots of books and read aloud a paragraph or two, encouraging students to read the rest of the book” (p. 16).

However, published investigations of amount of reading aloud to students by teachers are scarce, especially investigations that include high school teachers. So, responsible parties in many schools and local districts will have to consider the rationale and evidence and decide whether Content Area Read-Alouds could be successful instructional activities in their setting. The following is a status report, comprised mostly from grades kindergarten through eight, on teachers reading aloud as part of the instructional day.

In “Reading Aloud in Classrooms: From the Modal Toward a ‘Model,’” Hoffman, Roser, and Battle (1993) cite three studies. One study is from Austin and Morrison, 1963, indicating that many primary-grade teachers read aloud during “story time,” but they did not consider their reading aloud as part of reading instruction and that upper grade teachers did not feel they had time to read aloud to students. One study is from Hall, 1971, involving 84 student teachers reporting on the amount of reading aloud done by their cooperating teachers. Reports indicated that 48% of those teachers read aloud to their students on a daily basis. And in *Learning to Read in Our Nation’s Schools: Instruction and Achievement in 1988 at Grades 4, 8, and 12*, Langer, Applebee, Mullis, and Foertsch’s (1990) analysis of the NAEP database indicated that 57% of the surveyed fourth grade teachers reported reading aloud to their students daily.

In their own investigation into reading aloud in kindergarten through sixth grade classrooms, Hoffman et al. asked colleagues from 54 universities in 24 states to have their pre-service teachers who were assigned to classroom field experiences report their observations of teachers reading aloud. Respondents spent an average of 6 hours in the classroom for the

reported observations. The results from 537 classroom questionnaires indicated that 76% of primary grade level teachers and 68% of intermediate grade teachers read aloud daily to students. The most common material was fiction stories. Hoffman et al. (1993) summarize their finding about the state of reading aloud in this way: "The classroom teacher reads to students from a trade book for a period between ten and 20 minutes. The chosen literature is not connected to a unit of study in the classroom. The amount of discussion related to the book takes fewer than five minutes. Finally, no literature response activities are offered" (p. 500). The grade level in which reading aloud by the teacher was most likely to be tied to curriculum units was kindergarten (59%).

Jacobs, Morrison, and Swinyard (2000) report a questionnaire survey of 1,874 elementary teachers in kindergarten through grade six who were asked how many times in the last ten days they had read aloud to their students. In general, most primary teachers read aloud to their students, but in the intermediate grades, reading aloud by teachers decreased until only a small percentage of teachers read aloud regularly for any amount of time. Also, primary grade teachers generally read picture books, while intermediate grade level teachers most often read chapter books. Information books were not often selected for Read-Alouds by teachers at any grade. In fact, few teachers even introduced informational books to their students.

When teachers read aloud excerpts of quality nonfiction text for their students, they are providing exposure to examples of well-written informational prose, building background knowledge, enhancing vocabulary, deepening understanding of the content area, generating further interest in the topic, and modeling fluency. The Content Area Read-Aloud allows teachers to share their appreciation for the author's writing craft. Many teachers have discovered that sharing examples of strong writing, read aloud, can capture the attention of those students not typically interested in school related topics. In addition, Read-Alouds can demonstrate response strategies, as they allow the teacher to share the types of responses to literature we want students to experience. Ultimately, nonfiction Read-Alouds may help students begin to understand the connection between reading in school and reading after they leave school behind.

Content Area Read-Alouds also give struggling readers and many English language learners access to information contained in texts that are often written above their lexile level. They allow these students to be a part of the community of learners, as all students, regardless of their reading level, have access and exposure to the same content area information. According to the authors of *Reading Next* (Biancarosa & Snow, 2004), text-based



collaborative learning, which involves students interacting with one another around a variety of texts, is one of 15 key elements necessary for improving middle and high school literacy achievement.

A major factor in the school failure of disadvantaged children is inadequate vocabulary knowledge (Becker, 1977). Qualitative data overwhelmingly support the need for a rich oral and written environment on students' use of accurate and precise words in their writing and on students' awareness of, interest in, and attitude to words (Blachowicz & Fisher, 2000.) Instructional materials such as ample classroom libraries and instructional actions such as Content Area Read-Alouds enable teachers to provide these rich literacy environments and provide students with multiple sources of information that support superior learning (Stahl & Fairbanks, 1986).

While wide reading supports vocabulary growth, many of the students needing the most vocabulary growth are not capable of sustained independent reading of reasonably challenging texts. For these students and for English language learners, Read-Alouds are especially useful in developing vocabulary. Conversational English does not use a very rich vocabulary, so children who are not reading a lot may not appreciate the power of word choice. By utilizing quality Read-Alouds in the classroom, with content area text chosen above the student's independent reading level, teachers can build students' vocabularies and stretch their cognitive development. Thus, nonfiction Read-Alouds provide access to information that readers may not be able to experience on their own and serve as scaffolds in learning content area concepts. And, there is still much to be learned about the role that audio books can play in developing knowledge and vocabulary for students. Many adults enjoy learning from or just listening to a story, students in grades four through twelve may as well.

Teachers also can use Read-Alouds to introduce students to the best authors in their content area, to illustrators, to genres, and to the text structures and discourse most common in their discipline. Through exposure to, and instruction in how to recognize the common expository patterns, such as cause and effect, sequential order, questions and answers, and enumeration, students will find it easier to internalize these structures and use them as reading comprehension and writing tools. For some students, just enough exposure enables them to model such grammars in their own writing (Pappas, Kiefer, & Levstik, 1990). Thus, Read-Alouds function as demonstrations of quality writing, with the author serving as a mentor to students as writers. Read-Alouds become a support for developing students' capacity in reading and writing (Serafini & Giorgis, 2003).

*Opportunity for independent reading.* Many scholars of reading, but not all, agree that a relatively simple intervention—independent reading—can have

a powerful effect on students' comprehension, vocabulary, and knowledge of the world (Allington, 2001; Cunningham, 2005; Ivey & Broadbush, 2001; Stahl, 1999; Stanovich et al., 1998). By providing time to read during the school day, responsible teachers can implement this intervention and have more students reading, with the likely outcome of enhancing students' comprehension, vocabulary, and knowledge of the world.

There are many ways to increase reading time during the school day (Allington, 2001; Clarke, 2006; Fisher, 2004; Fisher et al., 2004; Kelley & Clausen-Grace, 2006; Pilgreen, 2000; Reis & Fogarty, 2006). Some ways focus entirely on free voluntary reading time, and others focus on more time for reading content area materials. School faculties have to determine which approach, or combination of approaches, is most likely to produce the results they want.

To support students' independent reading of materials that they select themselves and to demonstrate the importance of extensive, regular reading, many school faculties provide sustained silent reading time (SSR or uninterrupted SSR) or drop everything and read time (DEAR). However, authors of *Teaching Children to Read* (National Reading Panel, 2000), a report written to provide educators with guidance in developing beginning reading skills, found that most of the studies of ways to increase voluntary reading did not meet their screening criteria in terms of research methodology. Specifically, they state: "Studies of encouraging students to read rarely measure the actual increase in amount of reading due to the encouragement procedures, and they measure only the ultimate outcome (i.e., improvement in reading comprehension) rather than the intermediary enhancement to fluency that would be expected from the increased practice" (National Reading Panel, 2004, pp. 3-21).

School faculties who use "procedures" such as SSR to encourage voluntary independent reading and who inquire into their effects on students' reading and learning sometimes find these programs to be ineffective in bringing about the results they had hoped for on initiation. Instead of discarding the procedures, they have engaged in serious renovations that yield better results for the time invested. For example, in "Setting the 'Opportunity to Read' Standard: Resuscitating the SSR program in an Urban High School," Fisher (2004) shares an example of schoolwide action research around increasing independent reading. He describes how one high school faculty determined they needed to make changes in sustained silent reading (SSR) time, and what they did.

This 120-member faculty had been using SSR for ten years. A student comment about lack of time to read triggered an analysis of how many students were reading during SSR and how teachers were supporting, or not supporting, SSR. The data gathered from classroom observations



“suggested that fewer than 720 of the 2,200 students were reading during SSR” (Fisher, 2004, p. 140). As they assessed the impact of the program, they compared the September and May *Gates-MacGinitie* scores of students from four teachers who were high implementers of SSR and four teachers who were low implementers (rarely or never allowed students free choice and independent reading during SSR time). In September, there were no significant differences between the two groups; in May, the students who had time to read independently during school on a daily basis had .6 of a year higher scores. So, the faculty decided to “resuscitate” their SSR program.

Faculty members studying the problem were each given a copy of Pilgreen’s (2000) *The SSR Handbook*. Pilgreen describes eight attributes of a successful implementation of a schoolwide program that supports voluntary, independent reading: easy access to materials, appealing choices, conducive environment, structure for reading, encouragement from teachers and others, staff development, follow-up activities instead of accountability assignments, and distributed time to read (e.g., four 15 to 20-minute periods during the week instead of two 30-minute periods).

As usual, staff development time was limited, with only 90 minutes per month, so the team leading this effort enlisted the help of the video production class. Students developed commercials about SSR components. These commercials were used during staff development and on closed-circuit TV. Teachers were also provided with \$800.00 each and book lists to purchase books for their classrooms. The first year, most teachers purchased narratives. The second year, teachers received \$500.00 each and purchased a balance of narrative and expository texts. The school also subscribes to 80 different magazines and receives 100 newspapers a day to support their students’ reading of relevant and authentic materials. Fisher (2004) and the faculty at Hoover continue to use action research to provide themselves with continuous data about the effects of the programs they select to implement. Teachers’ beliefs that assignments are necessary instead of follow-up activities such as book chats, making posters or book jackets for a favorite book, and short conversations during the last few minutes of SSR are still in transition.

The investigation of the 10-year-old SSR program described above began with a student comment. But what do adolescents in other settings have to say about time to read in school? Ivey and Broaddus (2001) surveyed 1,765 sixth-grade students in 23 schools with diverse populations. Their overall findings were as follows:

1. [S]tudents valued independent reading and the teacher reading out loud as part of instructional time.
2. [W]hen asked what they liked most about time spent in class,

students focused more on the act of reading itself or personal reasons for reading than on social aspects or activities related to reading.

3. [W]hen students were asked what motivated them to read at school, they emphasized quality and diversity of reading materials rather than classroom setting or other people. (p. 351)

Providing students with opportunities to read and choice in text selection has a number of benefits: it increases the amount of time students spend reading during the school day; it can help students develop interest in a subject; it can build knowledge that helps students learn more about a topic; and it can familiarize students with different formats and genres used to provide information, which can serve as models for their own research and writing (Worthy, Broaddus, & Ivey, 2001).

Krashen (2004, 2007), a major advocate of independent reading time, maintains that free voluntary reading is one of the most effective tools available for developing a student's ability to read, write, spell, and comprehend. For low-SES students, having a variety of reading materials available at school is especially important if they are to have access to texts they want to read. When students are interested in what is being taught and have access to materials that interest them, learning, motivation, effort, and attitudes improve.

Think about opportunity to read during instruction for struggling readers and English language learners. In some schools, the reading program actually widens the gap between poor readers and good readers. This happens when students who are struggling the most in reading are provided with more instruction on the lowest level sub-skills, focusing on letters and words out of the context of meaningful reading and writing experiences, while good readers are provided with many more opportunities to read, to discuss what they've read, and to use reading and writing as communication (Allington, 1983; Applebee, Langer, & Mullis, 1988; Johnston & Allington, 1991). Allington (2006) says that the school day needs to be configured so that struggling readers read *more than* normally-developing readers. This is the only way schools can begin to close the achievement gap.

In a study of 30 successful secondary literacy programs around the United States reported in *Adolescent Literacy: What Works and Why*, Davidson and Koppenhaver (1993) found a number of common attributes of effective programs. Two key characteristics included giving students access to a wide variety of materials and spending a high proportion of time on actual reading, as opposed to drills. This finding was reconfirmed in a more recent study, *Literacy Learning in Middle Grades: An Investigation of Academically Effective Middle Grades Schools* (Strauss & Irwin, 2000). While time spent

reading and access to lots of books and materials of many kinds do not “teach” students to read, they are essential supports in developing literacy.

Your school or district may have some classrooms in grades four through twelve where the actions and materials advocated by the scholars and researchers cited here are already in place. Students in these teachers’ classrooms are fortunate. But is this true in all classrooms in your school, district, or region? The issue regards application of the knowledge base and equity. Irvin, Meltzer, and Dukes (2007); Fisher et al. (2004); and Torgesen et al. (2007) all describe and address the need for schoolwide action. *All teachers in all content areas working together with each other and with students can rapidly accelerate adolescent literacy.*

Why are content area teachers essential participants? Why can’t it be the responsibility of the language arts teachers, the reading teachers, the Second Chance teachers, or the Read 180 teachers to accelerate literacy and learning from reading? According to Irwin and her colleagues (2007), it is because content area teachers

- know the content;
- know the reading, writing, speaking, and thinking demands of the content they teach;
- have the access and the opportunity; and
- collectively have the power to make a difference. (pp. 53–54)

*The National Reading Panel’s Teaching Children to Read.* The mission of the panel was to analyze the knowledge base and provide educators with research-based evidence on how to develop beginning reading skills. Most of the studies on the effects of wide reading and opportunity to read did not meet their screening criteria. Stanovich (2000) has studied the effects of amount of reading on student learning for at least 20 years. The research studies and syntheses produced by him and his colleagues have done much to provide the evidence for promoting wide reading. While much of this evidence is correlational, by using hierarchical multiple regression and path analysis these authors have been able to rule out other causal hypotheses as they inquired into the cognitive consequence of exposure to print and amount of independent reading (Stanovich & Cunningham, 2004).

Your school or district may have incentive programs, especially at the elementary level, such as *Accelerated Reader* or *Pizza Hut Book It!* Are they producing the results needed to help all students develop as readers? What do your disaggregated data tell you about amount of reading, student performance, and students’ reading for fun? What about access to print in your setting, especially classroom collections and providing a range of content area materials for each classroom K–12? How about the degree to which teachers in grades four through twelve share content knowledge

with students via brief Read-Alouds to introduce concepts, generate questions, develop vocabulary, or simply model how historians or accountants might respond to an article or passage?

***Recommendations for Deliberation and Action on the Role of Reading Volume and Conditions that Support Learning from Reading in the Content Areas***

Members of the Iowa Adolescent Literacy Research and Development Team agree with many of the scholars and researchers cited above and have consolidated the implications of their work into the following statement:

*Encouraging students to read in and out of school, providing students access to a variety of texts for recreational reading and for learning in the content areas, providing opportunity to read during every school day (either print or electronic text), and providing Content Area Read-Alouds help build vocabulary, fluency, skill in writing, knowledge of language structures, knowledge of how language works in print, and knowledge in the content area.*

Colleagues are encouraged to think about how reading volume and reading to learn in the content areas are supported in their settings.

An exemplary classroom for adolescents—whether it's art, agriculture, accounting, chemistry, language arts, or a self-contained grade four—is one in which all students are expected to and supported in attaining high standards of performance. Students are provided a rigorous curriculum implemented through instruction that includes regular opportunities to discuss content with peers and their teacher—who is both guide and collaborator in the learning process—and regular opportunities to engage in exploration of content area questions. The teacher focuses instruction on key curricular concepts that emphasize depth of knowledge rather than coverage of topics, and designs lessons that engage students in building and applying that knowledge within and across content areas and in life experiences beyond school.

The following actions can be recommended based on the available research and information:

- Teachers and those who support them should examine the presence of diverse texts in all classrooms. Do classroom collections and school libraries have adequate materials to support student learning in the content area? Do these collections contain materials that students **will** read and **can** read? Are there books in other languages for English language learners to enjoy? Are the materials in classrooms and the school library at a wide range of reading levels so that most special education students and other

students at risk of academic failure can participate in the literate community?

- How much are students reading? Most of us “read to learn.” How are we supporting our students in this vital learning activity, and how well are they responding? Many of us read for relaxation, to escape to other settings, or for the sheer pleasure of visiting with a favorite author whose writing style and content we have come to appreciate. Are students using reading for recreation and building relationships with authors or favorite sources such as *National Geographic*, *Sports Illustrated*, or *The Des Moines Register*?
- Do students have opportunities to read during the school day? What opportunities are students given to practice the application of comprehension strategies? How much time are students given for sharing and discussing what’s been read? How much time is allotted for reading to learn content area concepts and developing key vocabulary? These opportunities have overlapping outcomes, and the big question is: Is the time being provided *adequate* to support the accumulation of knowledge and the development of literacy?
- Are formative assessment measures regularly used to help teachers, administrators, and students reflect on the amounts of and types of reading occurring? Are students surveyed about what they like to read and the kinds of support they need as readers and writers?
- Are content area teachers sharing curriculum content via brief Read-Alouds that build background knowledge and vocabulary, challenge students’ prior knowledge, help students generate new questions to explore, and model learning from text and multiple sources? What is the quality of the Read-Alouds in terms of text selected, curriculum appropriateness, lesson integration, and opportunities for student discussion and follow-up?
- How many middle and high school students are non-readers through grade three and almost completely unable to use the content area materials provided? How are these students identified and supported in accelerating literacy? How effective has this support been? To what extent do the programs for struggling readers and English language learners reflect support for reading to learn and reading for pleasure? What does access to multiple sources of information look like? Do these students have access to multiple sources of information in their classrooms?

As the leadership team and faculty inquire into these questions, they can compare their local data to the findings and implications of the research described above and decide if changes need to be made to facilitate student learning.

- If the answer is “yes” or “maybe,” then several actions are indicated:
  - a. A re-examination of curriculum to determine if reading to learn is included. Is reading to learn an expectation across content areas? Do the local curriculum documents reflect the need for students to read a variety of materials more closely linked to life outside of school?
  - b. Are the classroom libraries built around the main concepts of the core curriculum in each content area? If not, further examination of the curriculum to focus on depth and breadth of knowledge and to identify which concepts and skills are of most worth should be undertaken. These main concepts and the questions they generate help teachers, librarians, and administrators know which trade books and other resources to purchase.
    - We are not recommending curriculum examinations that consume large amounts of staff time. Rather, we suggest analyzing how the two curriculum actions from the *Core Curriculum for Iowa High Schools* are represented in grades four through twelve in literacy and across content areas:
      - Independently reads a significant number of books and texts each year. This reading should include both fiction and nonfiction in a variety of genres.
      - Reads for a variety of purposes and across content areas (IDE, 2006, p. 28).
    - School and AEA librarians and media specialists, lead team members, and staff development providers can help faculties focus on core concepts and building classroom collections a few units at a time.
  - c. Do the techniques for gathering information about students' engagement in reading—including how much they are reading, whether and what kinds of opportunities are routinely provided for sharing, what kinds of materials they are reading and what they would like to have added to classroom and school libraries, in addition to how teachers encourage reading—need to be strengthened to provide directions for action?
  - d. Many students will need to be taught strategies for selecting books, routines for settling down to read, and strategies to help them learn from reading (such as re-reading or summarizing when the text is complex). They will need to see demonstrations of and have opportunities to share, respond to, or apply what

they've read, and they will need instruction in how to use an author's writing style to improve their own writing.

- e. Teachers may need professional development and help locating a wide range of “diverse” materials that meet their expectations. They may need initial support as they expand the use of these materials into their classroom and into their instructional repertoire. Many language arts, reading, and English teachers are accustomed to providing ample materials of many types—books, magazines, files of articles, brochures, and manuals—that include applications of the knowledge and concepts they are working to develop. However, for many other secondary teachers, this may be a new task. As teachers build their classroom collections, they may need support in identifying the core curriculum concepts and learning objectives they want to develop and reinforce as students engage with these materials. Teachers may also need professional development in how to weave Content Area Read-Alouds into their daily instruction.
- f. In their classroom observations and school visits, do school and district administrators look for quality reading materials and evidence of effective methods of increasing student engagement in reading? Is there a budget to increase classroom collections and enable easy access to electronic texts?

We recommend that if faculties discover they need to work on increasing students' reading volume and strengthening conditions that support learning from reading, they might begin with one of the units of collective study in Part One of the Adolescent Literacy Professional Development Series. Part One includes an introductory unit for faculties that have not been engaging in continuous study and improvement around literacy, a unit on reading volume and ways to increase it, a unit on Content Area Read-Alouds, and a unit on building access to print. One of these units, or a combination of them, may be appropriate for your setting.

## **Closing Remarks**

The unique language of books and literacy is learned the way any language is learned, by using it day in, day out, year after year. Thus, a critical part of being literate is reading a lot. Data from interviews with Iowa teachers, librarians, guidance counselors, and administrators confirmed that student engagement and motivation with the content of schooling, reading proficiency and reading habits, and meeting the needs of all students are among their greatest concerns when they think about student achievement and performance in their schools. The knowledge and actions addressed above, when implemented schoolwide, can help address many of these concerns.



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## **The Role of Vocabulary Development in Accelerating Adolescent Literacy**

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*Words are used to communicate ideas. The more words you “own,” the better you are at acquiring words and the more control you have over your own learning processes and educational progress. (Calhoun, 2004, p. 115)*

Vocabulary knowledge is a critical component in all content areas. Most teachers agree that students must understand the terminology of a discipline if they are to be successful in understanding and applying the key concepts within that discipline. As students progress from grade to grade, vocabulary demands in the content areas increase until they reach about 40,000 words, though some say 88,000 for successful participation in secondary education (Nagy & Anderson, 1984; Nagy, Herman, & Anderson, 1985). These are daunting figures with implications for all educators and all curriculum areas.

How do we help students access our content and strategically learn vocabulary? How do we help them acquire the words they need to be successful learners in every content area? Ultimately, we want students to be capable, proficient language users who understand how words function in communication; are skilled at learning new words on their own; and are able to choose the best words to convey their ideas, thoughts, and emotions.

In this section of the report, we discuss the current state of vocabulary instruction and offer insight into the research and best practices in vocabulary instruction for students in grades four through twelve. To

facilitate this discussion, we will use the following definition: *Vocabulary refers to the words we must know to communicate effectively.*

Knowledge of words is described as *receptive vocabulary*—the words we understand or recognize when we listen and read, and *productive vocabulary*—the words we use when we write or speak (Hiebert & Kamil, 2005). As students approach the upper elementary grades and beyond, it is important to consider two significant characteristics of vocabulary knowledge:

1. Vocabulary breadth: the number of words whose meanings are familiar to an individual
2. Vocabulary depth: the completeness with which an individual understands familiar words

As students develop as readers and writers, they continue to add new words to their existing receptive and productive vocabularies, and they deepen their understanding of the degree/shades of meaning, synonyms, antonyms, and/or language origin for individual words.

### **Why is Vocabulary Knowledge Important in the Development of Literacy?**

Vocabulary knowledge supports a student's ability to comprehend oral language, read both common and specialized texts, interpret and use documents, utilize computer tools for a variety of tasks, and communicate through writing and speaking.

Many students need instructional support as they work to expand their receptive and expressive vocabularies in grades four through twelve. There are four reasons for this instructional support. First, adolescent students read a lot in the content areas. This reading presents them with new concepts with which they may not be familiar or for which they have no or limited prior knowledge. While students may be proficient readers without decoding issues and possess healthy vocabularies from their past general reading, teachers often need to explicitly instruct them in *how to expand their curricular vocabularies*. Students who are not proficient at decoding and haven't much incidental reading experience will need strategic vocabulary building instruction to enable them to read their content area textbooks. Because secondary texts become denser in terms of vocabulary load and concepts, and generally lengthier, as students progress from grades four through twelve, reading challenges for most students increase, and more time is required for reading assigned material. Second, all students, especially those who struggle, need strong word-solving practice so they use less cognitive energy for decoding and more for comprehension. Third, teachers need to support students in learning from the reading they do, thus expanding their vocabulary. And fourth, content area teachers often

need to identify and teach the key words/concepts associated with their units. Of course, the vocabulary of any domain is itself a vital part of the content to be learned.

Understanding the meanings of words is a crucial factor in reading comprehension (Anderson & Freebody, 1981). Recent research in the area of vocabulary gives educators a better understanding of the direct link between vocabulary acquisition and reading comprehension (Irvin, Buehl, & Klemp, 2003). Readers cannot understand what they are reading without knowing what most of the words mean. If the words of the text are present in the student's oral vocabulary, comprehension should occur because the process of decoding a word to speech does nothing more than change its representation from visual print to oral speech. However, if the print vocabulary is more complex than the student's oral vocabulary, comprehension is more difficult.

One of the most powerful predictors of a reader's success with understanding difficult text is the reader's general vocabulary knowledge. Anderson and Freebody (1981) hypothesize about why vocabulary knowledge is so strongly related to comprehension. Their major hypotheses are

1. understanding words enables readers to understand passages;
2. verbal aptitude underlies both word and passage comprehension;
3. vocabulary knowledge may be related to a person's store of background information, which facilitates comprehension.

Adolescents who are fluent readers generally recognize the 5,580 most frequently occurring words and can use the context provided in paragraphs and sentences to understand words that occur less frequently but are critical to the meaning of the text (Hiebert & Kamil, 2005). When the number of known words is not sufficient to figure out the meaning of unknown words, comprehension breaks down. Such a scenario can happen to proficient readers when they read highly technical text in subject areas for which they have insufficient background knowledge. Attending to unknown or rarely used words may require so much cognitive energy that overall meaning is lost or compromised.

### **What Do We Know about the Existing Vocabularies of Adolescents?**

The "average" student graduating from high school is estimated to know approximately 40,000 words (Nagy & Herman, 1985, cited in Cunningham, 2005). High school seniors near the top of their class know about four times as many words as their lower-performing classmates (Smith, 1941). In order to increase one's vocabulary to 40,000 words between age two and eighteen, a child needs to learn approximately seven words a day. While individual students vary widely in how many words they learn in a single

year, it is estimated that the average student adds around 3,000 words each year between third and twelfth grades (Anderson & Nagy, 1992; Anglin, 1993; Nagy, Anderson, & Herman, 1987; Nagy et al., 1985; White, Graves, & Slater, 1990).

The process of learning new words begins in infancy and continues throughout one's adult life (Cunningham, 2005). Individual differences in vocabulary size appear very early and are strongly correlated with socio-economic status (Hart & Risely, 1995). The noticeable gap in vocabulary knowledge between economically disadvantaged and economically advantaged students is apparent as early as preschool and generally persists through the school years. And, of course, limited vocabulary knowledge correlates positively with poor school performance (Becker, 1977; Coyne, Simmons, & Kame'enui, 2004; Hart & Risely, 1995; White, Graves & Slater, 1990).

The average child from a low income family hears about three million words per year versus six million words per year for a child from a working class family, and 11 million words per year for a child from a professional family (Hart & Risely, 1995). Children in economically disadvantaged households are exposed to significantly fewer words, which in turn are related to their personal vocabulary use and their rate of vocabulary growth. Over time, the academic performance of children who enter school with limited vocabulary knowledge grows more discrepant from their peers who entered with extensive vocabulary knowledge and a variety of shared world experiences with their families.

Vocabulary deficits particularly affect English language learners (ELLs). Knowledge of English vocabulary is one of the strongest correlates of the discrepancy between the reading performance of native English speakers and that of ELLs. This correlation remains despite the fact that many ELLs possess a large vocabulary in their native language (Garcia, 1991; Goldenberg, Rezaei, & Fletcher, 2005; Verhoeven, 1990). This discrepancy is logical considering that many of these performance measures are written in English for native English speakers.

Secondary educators often find their students do not have the necessary skills to use reading and writing effectively to learn content material. These teacher impressions are confirmed by data which show U.S. students in fourth grade have placed close to the top in international comparisons of performance on reading assessments while eleventh graders have placed close to the bottom. *Iowa Tests of Basic Skills (ITBS)* and *Iowa Tests of Educational Development (ITED)* student vocabulary data collected by a local area education agency (AEA) illustrates the difficulty of accelerating vocabulary growth: students in eighth grade have remained at the 58<sup>th</sup> percentile (normed percentile rank [NPR]) and eleventh grade students

have improved only slightly from the 62<sup>nd</sup> to the 63<sup>rd</sup> percentile (NPR) over the past three years, 2003–2006.

Vocabulary demands on students skyrocket during the secondary school years, expanding to an estimated 88,500 words in academically demanding settings (Nagy & Anderson, 1984). While academic language demands are high, it is estimated that everyday speech consists of only 5,000 to 7,000 words (Klein, 1988). What can be done to help students close the gap between their current vocabulary knowledge and the word knowledge they need to be successful in all content areas?

### **What Do We Know about Current or “Typical” Vocabulary Instruction in Grades Four through Twelve?**

We know that what is currently being done is not working to accelerate vocabulary learning for all students. Additionally, vocabulary instruction and commercial programs that support vocabulary development have changed little over the years (Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006).

Almost every experienced teacher gives some attention to vocabulary instruction, ranging from introducing new words in reading lessons to teaching technical vocabulary in content courses such as science or social studies. Many teachers provide vocabulary building programs or activities. Traditionally, a program of this type includes giving students a list of words (20 is often the magic number), asking them to study the definitions, and then quizzing them. (This is a version of a very common instructional approach often called IRE: initiate, recite, and evaluate.) These vocabulary building programs usually involve lessons in how to use a dictionary, analyze word parts, and utilize context clues to figure out word meanings while reading. However, there is growing evidence that vocabulary building programs do not work very well (Anderson & Nagy, 1992).

In 1984, Nagy and Anderson concluded that any program of direct vocabulary instruction ought to be developed with the acknowledgment that it can cover only a small fraction of the words that students need to know. Trying to expand students' vocabularies by teaching them words one by one, or ten at a time, or even a hundred at a time would appear to be an exercise in futility. And, the available evidence demonstrates that definition-based vocabulary instruction does not reliably produce the ability to use a word correctly when speaking or writing, nor does it increase comprehension of text containing the instructed words (Anderson & Nagy, 1992). Consider, also, that dictionary definitions are written with very sophisticated language and in very brief form to accommodate limited space per word. A further complexity is that many words have multiple meanings or multiple shades of meaning depending on the context in which they are used.

When thinking about dictionary definitions, one should remember that

when students are learning new words for familiar concepts they can often learn the meanings of those words by simply reading definitions. However, it is much harder for students to learn a new word for an unfamiliar concept by simply reading a definition; e.g. convection. Sometimes one needs to understand a whole network of concepts to grasp the meaning of one word.

The research on classroom vocabulary instruction indicates that teachers seem to have a great interest in teaching vocabulary, but they make inconsistent use of research evidence on how to implement effective instructional strategies. The vocabulary instruction adolescents receive has been less comprehensive and less systematic than it could be; often consisting of teaching a small number of words that appear in the selections students are reading (Graves, 2004). Traditionally, secondary vocabulary instruction has not included routines for introducing new words, a means of providing students with multiple ways to engage with vocabulary words over time, and/or involvement of the students in actively assessing and consciously building their vocabularies.

Given that word lists and dictionary activities are questionable practices for promoting vocabulary growth, what elements would comprise good instructional practices for increasing students' vocabularies and vocabulary development strategies?

### **What Do We Know about Accelerating Vocabulary Development in Grades Four through Twelve?**

Rich language experiences and wide reading form the foundation for all vocabulary instruction. A language and word-rich environment is one in which students' opportunities to read, to hear, to use in speaking and writing, and to explore new vocabulary are many and varied (Blachowicz et al., 2006).

#### ***Learning Vocabulary through Reading—The Role of Reading Volume***

First, consider the role of wide reading. Reading volume—the amount that students read in and out of school—significantly affects vocabulary development, reading comprehension, general knowledge of the world, overall verbal ability, and academic achievement (Cunningham, 2005; Stanovich, Cunningham, & West, 1998). While there are few experimental studies demonstrating causal effects for quantity of reading on vocabulary and reading development, there are many studies indicating strong correlations between amount of reading and reading growth (e.g., Cipielewski & Stanovich, 1992; for reviews see Krashen, 2004; Allington, 2001; Cunningham). While causality has not been proven, the amount of time students spend reading silently is one of the strongest predictors of reading comprehension in general and vocabulary development in particular.

A major reason for this powerful relationship between wide reading and vocabulary development is that written language is much more likely to contain the vocabulary, text structures, and complex sentence patterns that are so characteristic of school language. Hayes and Ahrens (1988) analyzed the distribution of words used in several categories of oral and written language according to their frequency of occurrence in the English language. (See Table 8.1.) In general, they found that speech contained far fewer rare or unique words than written language. For example, in the categories of discourse they analyzed, only courtroom testimony had more rare words than children's books; even preschool books had more rare words than conversations between college graduates speaking to friends or their spouse.

**Table 8.1**

Selected Statistics for Major Sources of Spoken and Written Language

	Rank of Median Words	Rare Words per 1000
<b>I. Printed texts</b>		
Abstracts of scientific articles	4389	128.0
Newspapers	1690	68.3
Popular Magazines	1399	35.7
Adult books	1058	52.7
Comic books	867	53.5
Children's books	627	30.9
Preschool books	578	16.3
<b>II. Television texts</b>		
Popular prime-time adult shows	490	22.7
Popular prime-time children's shows	543	20.2
Cartoon shows	598	30.8
Mr. Rogers and Sesame Street	413	2.0
<b>III. Adult speech</b>		
Expert witness testimony	1008	28.4
College graduates to friends, spouses	496	17.3

Note: Adapted from Hayes & Ahrens (1988) in Cunningham & Stanovich (1998).

*Acquiring words while reading.* Let's think about the relationship between wide reading and building sight vocabulary. This vocabulary acquisition process is often called "incidental word learning while reading." It refers to 1) moving a word into one's sight vocabulary through a single print exposure while reading and through multiple exposures to the word while reading connected text, and 2) increasing one's depth of knowledge about word meaning through multiple exposures in different texts and from different perspectives. Some sources say the probability of moving an unfamiliar word into one's sight vocabulary from a single exposure while reading is around five percent (Nagy et al., 1987). Other sources say it's around fifteen



percent (Swanborn & de Glopper, 1999). However, to build new concepts and integrate a word into one's own speaking and writing vocabulary generally requires multiple exposures, which is why wide reading is so critical to content area learning.

In learning words while reading, better readers have the advantage. Better readers read more than poorer readers, thus developing their vocabularies more rapidly and enjoying more intrinsic rewards from the act of reading, which encourages them to read even more. Students who do not read well read less and with less enjoyment. This limits their development of sight vocabulary and their opportunities for reading practice, which further constricts their progress in reading and reduces their ability to use school texts. This continues as they advance from one grade level to the next and into ever more complex content area reading materials. The popular label for this advantage/disadvantage is the "Matthew effect," from the Gospel According to Matthew: "For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath" (25:29). The scholar who has done the most to study these reciprocal processes and clarify how reading volume has a "rich get richer" effect on reading development is Keith Stanovich (Stanovich, 1986 & 2000).

In studies of fourth, fifth, and sixth grade students (Cunningham & Stanovich, 1991), eleventh grade students (Cunningham & Stanovich, 1997), and college students (Stanovich & Cunningham, 1992, 1993), the amount of independent reading was found to contribute significantly to vocabulary knowledge. In the 1993 study, the authors accumulated even more evidence that reading volume contributes to domain knowledge among older students. (See Cunningham, 2005, for a more in-depth analysis and explanation of these findings.)

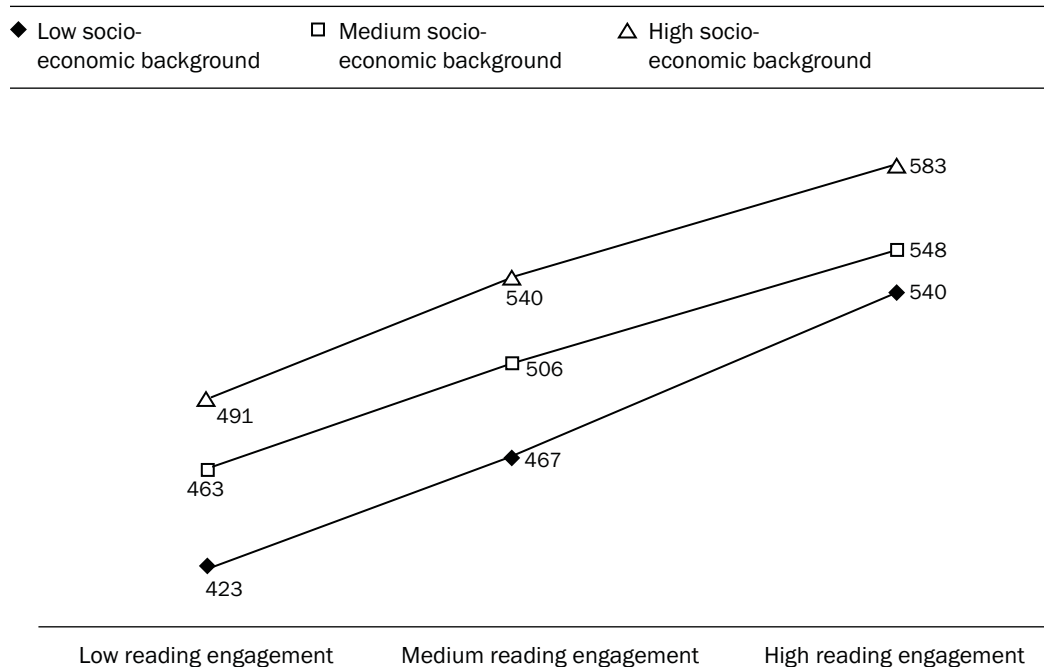
There is relatively widespread agreement that a large storehouse of sight words and their meanings are acquired from simply reading extensively (Nagy et al., 1987; Nagy et al., 1985; Stahl, 1999; Stanovich, 2000; Sternberg, 1987; Swanborn & de Glopper, 1999). From third grade on, amount of reading is the "major determinant of vocabulary growth" (Nagy & Anderson, 1984). Just reading words in context builds sight vocabulary and knowledge of word meanings.

*The relationship between extensive reading and socioeconomic status (SES) as a predictor of academic success.* SES is a major predictor of academic performance in U.S. schools (Sirin, 2005). As shown in Table 8.2, the relationship between SES and reading performance can be affected by the students' degree of engagement with reading (Kirsch, et al., 2002a). Because of the effect SES has on literacy and the sample size of the PISA study (265,000 15-year old students from 32 countries), we are sharing



**Table 8.2**

Reading literacy performance and socio-economic background level of reading engagement



Source: OECD PISA database, 2001, Table 5.9

part of the authors' summary of their response to the question:

"Can engagement in reading compensate for the socioeconomic background?"

Students who have parents with the highest occupational status and who are highly engaged in reading obtain the best average scores on the combined reading literacy scale (583). This is more than one proficiency level or 0.83 of a standard deviation above the Organization for Economic Cooperation and Development (OECD) average. And students who have parents with the lowest occupational status and who are the least engaged in reading obtain the lowest average score (423). This score is one proficiency level below the OECD average and more than one-and-a-half standard deviations below the average of students in the high-engagement, high-status group. [More importantly, from our perspective, 15-year old students who are highly engaged readers and whose parents have the lowest occupational status achieve significantly higher average reading scores (540) than students whose parents have the highest occupational status but who are

poorly engaged in reading (491)]. The difference in their average scores is more than half a standard deviation. And these highly engaged students whose parents have low occupational status perform as well on average as those students who are in the middle engagement group but whose parents have high-status occupations. (Kirsch et al., 2002a).

Many scholars of reading, but not all, agree that a relatively simple intervention—independent reading—can have a powerful effect on students' comprehension, vocabulary, and knowledge of the world (Allington, 2001; Cunningham, 2005; Ivey & Broadbush, 2001; Stahl, 1999; Stanovich et al., 1998). By providing time to read during the school day, responsible parties can implement this intervention and have more students reading and acquiring vocabulary through reading.

There are many ways to increase reading time during the school day (Allington, 2001; Clarke, 2006; Fisher, 2004; Fisher, Frey, & Williams, 2004; Kelley & Clausen-Grace, 2006; Pilgreen, 2000; Reis & Fogarty, 2006). Some focus entirely on free voluntary reading time and others focus on more time for reading content area materials. School faculties have to determine which approach, or combination of approaches, is most likely to produce the results they want.

(See the “The Role of Reading Volume and Learning from Reading in Accelerating Adolescent Literacy” for additional information on the gender differences in reading volume, attitudes toward reading, and options for increasing independent reading.)

*Opportunities to learn vocabulary and concepts from teacher Read-Alouds.* Do students in grades four through twelve in your school or district have daily opportunities to learn from teachers who read aloud to them information that is relevant to the curriculum content of the day? There is increasing awareness of the role that Read-Alouds can play in developing fluency, vocabulary, knowledge of the world, and content area concepts. One of the most published quotations from the 1985 *Report of the Commission on Reading: Becoming a Nation of Readers*, is “The single most important activity for building the knowledge required for eventual success in reading is reading aloud to children” (Anderson, Hiebert, Scott, & Wilkinson, 1985). But what is exciting today is the increasing realization that sharing high-quality nonfiction text with students at all ages supports learning. For example, Stahl's (1999) conclusion that reading aloud to older students helps build vocabulary knowledge and the International Reading Association's President's Message for August/September 2007, in which Linda Gambrell reminds readers that: “As teachers, we encourage students to read widely when we introduce lots of books and read aloud a paragraph or two, encouraging students to read the rest of the book.”

Content Area Read-Alouds also give struggling readers and many English language learners access to information contained in texts that are often written above their lexile level. They allow these students to be a part of the community of learners, as all students, regardless of their reading level, have access and exposure to the same content area information. According to the authors of *Reading Next* (Biancarosa & Snow, 2004), text-based collaborative learning, which involves students interacting with one another around a variety of texts, is one of fifteen key elements necessary for improving middle and high school literacy achievement.

A major factor in the school failure of disadvantaged children is inadequate vocabulary knowledge (Becker, 1977). Qualitative data overwhelmingly support the need for a rich oral and written environment on students' use of accurate and precise words in their writing and on students' awareness of, interest in, and attitude to words (Blachowicz & Fisher, 2000). Instructional materials such as ample classroom libraries and instructional actions such as Content Area Read-Alouds enable teachers to provide these rich literacy environments and provide students with multiple sources of information that support superior learning (Stahl & Fairbanks, 1986).

While wide reading supports vocabulary growth, many of the students needing the most vocabulary growth are not capable of sustained independent reading of reasonably challenging texts. For these students and for English language learners, Read-Alouds are especially useful in developing vocabulary. Conversational English does not use a very rich vocabulary, so children who are not reading a lot may not appreciate the power of word choice. By utilizing quality Read-Alouds in the classroom, with content area text chosen above the students' independent reading level, teachers can build students' vocabularies and stretch their cognitive development. Thus, nonfiction Read-Alouds provide access to information that readers may not be able to experience on their own and serve as scaffolds in learning content area concepts. Further, there is still much to be learned about the role that audio books can play in developing knowledge and vocabulary for students.

When teachers read aloud excerpts of quality nonfiction text for their students, they are providing exposure to examples of well-written informational prose, building background knowledge, enhancing vocabulary, deepening understanding of the content area, generating further interest in the topic, and modeling fluency. The Content Area Read-Aloud allows teachers to share their appreciation for the author's writing craft. Many teachers have discovered that reading aloud examples of strong writing can capture the attention of those students not typically interested in school related topics. In addition, Read-Alouds can demonstrate response strategies, as they allow the teacher to share the types of responses to

literature they want students to experience. Ultimately, nonfiction Read-Alouds may help students begin to understand the connection between reading in school and reading after they leave their schooldays behind. Increasing the amount of reading that students do improves student vocabulary and overall intellectual growth (Stahl, 1999). Direct teaching of word meanings can also improve students' vocabulary, but teaching 300 words a year directly would be very time consuming. *Sound vocabulary instruction includes both wide reading and direct instruction in word meanings.*

Although students of all ages and abilities may be able to learn words through context, Anderson and Nagy (1992) concluded that certain conditions facilitate the process of incidental word learning. For example, a student is twice as likely to learn an unfamiliar word when reading a narrative text that is matched to his/her level of comprehension. The ease with which a word is learned from text is also a function of the word's conceptual difficulty, the informativeness of the context, the number of times the word is encountered, and the importance of the unknown word for comprehending the surrounding context (Anderson & Nagy; Nagy et al., 1985; Sternberg, 1987; Sternberg & Powell, 1983).

Wide reading is a powerful learning strategy that includes introducing students to different genres and authors as well as encouraging them to read a variety of texts independently. Although the conclusion of the National Reading Panel Report on *Teaching Children to Read* indicates a lack of experimental or control group research that supports wide reading (National Institute of Child Health and Human Development, 2000), Cunningham (2005) makes a compelling argument that the differential volume of reading students do is a powerful source of vocabulary learning. In her summary of a series of studies investigating the importance of encounters with words in written language, she found volume of reading to be a powerful predictor of differences in both vocabulary and subject knowledge. Allington (2001) recommends ninety minutes of actual reading time for every school day and indicates that this would be one of the first changes he would make in the instructional environment to enhance the reading development of all students. Allington states, "If I were required to select a single aspect of the instructional environment to change, my first choice would be to create a schedule that supported dramatically increased quantities of reading during the school day."

*Raising word consciousness.* Raising students' awareness of words and their meanings and helping students with word-learning strategies help build vocabulary knowledge. Students benefit from word-rich classrooms where teachers do Content Area Read-Alouds, where time is taken to discuss new words and concepts, and where teachers provide brief,

student-friendly explanations of words. Teachers in these classrooms also have an opportunity to share how they continue to build their own vocabularies and learn from reading; and they provide a wide assortment of texts from which students may choose to read.

Word consciousness includes understanding how word parts contribute to the meaning of a word. Although word parts alone seldom completely determine the meaning of words, students can be taught to effectively use root words, prefixes, and suffixes by considering the context in which the word is used along with using personal knowledge of the topic. Understanding nuance of meaning and connotation is another important part of word consciousness. For students in grades four and above, productive content-area discussions occur as students consider shades of meaning for related words.

Judith Scott and her colleagues conducted a series of studies (as cited in Blachowicz et al., 2006) (Nagy & Scott, 2000) examining the word learning of students in word-rich intermediate-grade classrooms. Qualitative data overwhelmingly supported the effectiveness of such environments on student use of interesting words in their writing and on student awareness of, interest in, and attitude toward words. Incidental word learning, through listening or reading, is important to students' general vocabulary development. Oral language is a crucial channel of vocabulary growth and remains a tool for promoting vocabulary expansion even when students have become proficient readers.

Vocabulary instruction which includes pronunciation of the new vocabulary words and strategies for decoding them, such as Cunningham's (2005) "Nifty Fifty," student-friendly definitions, contextualization of the words, opportunities for multiple engagements with the words in an assortment of contexts (including computer-assisted), and a variety of assessment formats have proven effective for improving vocabulary growth. A classroom environment that encourages social interactions related to reading and creates an excitement around learning new words increases students' volume of reading and their level of comprehension (Guthrie, Schafer, Wang, & Afflerbach, 1995).

*Direct teaching of content area words.* How can technical vocabulary best be approached? Unfamiliar words are the first obstacle to comprehension. *However, the problem is often unfamiliar concepts rather than unfamiliar words.* Here, teachers use graphic organizers, semantic webs, feature matrix analysis to help students construct unfamiliar concepts from simpler concepts they already know. When the domain is complex, students will need many experiences to successfully explain concepts in their own words, solve fresh problems, and apply vocabulary terms independently in new situations (Anderson & Nagy, 1992). Also, a long, unfamiliar word can be

difficult for students to pronounce, hard to remember, and may have no association for the concept it represents, even when the concept is familiar to the student. Pausing with a class to reflect about the meanings of technical terms, to consider word parts such as Greek or Latin roots, and apply these parts to unfamiliar words will aid students in learning technical vocabulary.

Biemiller's (2001) work suggests there is a developmental trajectory to vocabulary learning. When instruction emphasizes the morphophonemic (root words, prefixes, suffixes) nature of our language, students can acquire many word meanings rapidly (e.g. *magic* yields knowledge of *magician*, *magical*, *magically*). Teaching key root words and prefixes and suffixes that are frequently encountered within a content area helps students build their vocabularies and their vocabulary learning strategies. When instruction on using context is added, the effects on vocabulary learning are expanded (Baumann et al., 2002; Baumann et al., 2003).

Another question that often surfaces with regard to direct teaching of vocabulary is "Which words should be taught?" Fortunately, there are several approaches a teacher may use to choose appropriate words for study. Teachers may select words that are not well established in students' vocabularies and will be encountered frequently in future instruction (Beck, McKeown, & Kucan, 2002). Another option for teachers is to select words that are critical to comprehension of a selected passage. They may select words based on their generativity, using a particular word or word part to learn other words (Blachowicz et al., 2006; Graves, 2006). And, teachers may select words from a variety of published word lists designed to provide vocabulary words appropriate to various grade levels and content areas. *The Fry Instant Words List* (Fry, Kress, & Fountoukidis, 2004), *The Living Word Vocabulary* (Dale & O'Rourke, 1976), *A New Academic Word List* (Coxhead, 2000), and *Teaching Word Meanings* (Stahl & Nagy, 2006) are all examples of such lists. Recently, older word lists of content area vocabulary (Harris & Jacobson, 1982) have been updated and lists representing important content areas and word families have been created (Marzano, 2004).

Teacher's word choice enhances students' benefits from direct instruction. In grades four through six and in language arts classes, it may be especially beneficial for the instruction to focus on high utility words that students are more likely to encounter in other texts and which are critical to student understanding of the text being read (Beck et al., 2002).

The question of *who* should choose vocabulary words is of particular interest to those working with adolescents. Teachers of specific content areas recognize that each domain requires certain words be taught. Beyersdorfer (1991; as cited in Blachowicz et al., 2006), reviewed studies

of word choice indicating that content area teachers produced word-study lists with a high degree of overlap across teachers. Commercial literacy texts vary greatly in the presentation of different genres of literature and may emphasize vocabulary that represents frequency, decodability, importance to comprehension of the text, or words needed for a particular strategy or skill. These types of instructional materials require systematic appraisal by teachers to select the words most appropriate for their students (Beck et al., 2002).

There is considerable evidence that student self-selection of vocabulary can be productive in building motivation and study skills, particularly with older students. In a 1991 study, Fisher, Blachowicz, & Smith found fourth grade students in literature circles not only chose vocabulary words that were at or above their grade level but also retained the knowledge of their meanings. A partial replication of this study with seventh graders yielded similar results. Dole, Sloan, & Trathen (1995) found that allowing tenth grade students in literature groups to select their own words was an effective vocabulary learning strategy. Further, students who received instruction in a process showing them how to select important words for the reading selection learned more than those who did not. Harmon, Hedrick, Wood, & Gress (2005) found that eighth grade students and adults were equally effective in choosing appropriate vocabulary from expository texts to study, although they varied in their reasons for choosing the words. In addition, Jimenez, Garcia, & Pearson (1996) cited self choice as a powerful motivator for word learning. When teaching words in the content area, a balance of teacher choice and student choice of words to study is probably most effective.

In addition to providing multiple sources of information, repeated exposure is an important component of word learning. Just as skilled adult readers do, students require several interactions with a word to truly own the word and have it available for personal use (Beck, McKeown, & McCaslin, 1983; Blachowicz & Obrochta, 2005; Duke, Bennett-Armistad, & Roberts, 2003). Content area teachers, including English and language arts teachers, should facilitate student discussions that require students to use the designated words meaningfully. Teachers should further engage the students with follow-up activities to ensure more repetition of the words, and their integration into the students' understanding of the concepts under study.

*Using technology may enhance vocabulary knowledge.* As cited in Blachowicz et al., 2006, Reinking and Rickman's 1990 study comparing the comprehension performance of two groups of middle grade students reading science texts, students with technology available investigated more word meanings, recalled the meaning of more words, and comprehended



more of the experimental text than comparison students. As cited in Blachowicz et al. (1999) case studies of high school students found metacognitive reflection was an important part of learning, and students welcomed working on and responding to electronic texts where they had the privacy to answer without having others make fun of their replies. Considering what we know about word learning generally, electronic texts may be both motivating and effective for word learning if they provide ways for students to actively engage with words.

*Teaching vocabulary development and word solving strategies through explicit strategy instruction.* Explicit strategy teaching can help students comprehend text better and cope with unfamiliar words (Duffy, 2003; Duke & Pearson, 2002; Nagy, 2005).

In the domain of vocabulary development, an explicit strategy instruction lesson might follow this format:

- The teacher introduces the vocabulary building strategy to the students and tells the students she or he will be demonstrating what skilled readers do when they encounter an unfamiliar word. If the teacher has selected a particular word-solving strategy, e.g., using the surrounding text and illustrations to demonstrate, she tells students what the strategy is and explains why it will be useful to them.
- The teacher reads aloud the text she has selected, then shares a copy with students via computer, overhead projector, as a handout, or from a common text.
- The teacher describes her thinking and actions as she figured out the meaning of a word in that particular context.
- Students engage in an immediate practice activity in which they apply that same strategy or strategies.
- The teacher observes and listens as students work with text to determine what needs to be emphasized in the next lesson.
- The teacher, or students and the teacher, decide what actions or products they will look for as evidence that students have transferred the application of this strategy to real reading and writing situations. (Calhoun, 2005)

Just as in the teaching of reading comprehension strategies, explicit strategy instruction is a tool to help students learn from reading, in this case, learning vocabulary and concepts represented by words. Strong readers use multiple strategies—using word parts and thinking about the context; rereading; skipping the word and continuing to read, then coming back to the word; using the syntax or order of words in the sentence and passages; using prior knowledge and reference sources; and decoding—to figure out unknown words. Therefore, it is important to teach students to make good



decisions about which strategies to use when they encounter unknown words (Irvin, Buehl, & Klemp, 2007).

Harmon, in her work with middle school students, found that students, especially those who are struggling readers, need to know that they are capable of making good decisions about unknown words. By the time they reach middle school, many of these students have developed inefficient ways to decipher unfamiliar words (2000, 2002; Harmon et al., 2005). These students need opportunities where they can try out strategic maneuvers that lead to successful encounters with new words. And, they need instructional support in how to effectively transfer such strategies to their own independent reading. Of course, students of all ability levels can benefit from an approach that emphasizes strategic vocabulary learning.

*General reminders on building a comprehensive approach to supporting and assessing vocabulary development.* Effective vocabulary instruction requires a repertoire of teaching activities and instructional strategies. The following characteristics of effective vocabulary instruction are applicable across different teaching contexts and content areas:

- Learners are actively involved in the generation of word meanings rather than as passive receptors of information.
- Instruction provides both definitional and contextual information about the words to be learned as well as multiple exposures and opportunities to use them.
- Instruction needs to help students consolidate word meaning through the use and application of multiple information sources. (Blachowicz et al., 2006)

Active engagement helps students learn the meanings of specific words by making connections between and among words and concepts, and active engagement makes it more likely that students will learn strategies for use as independent word learners. The available research in this area suggests that having students make semantic (meaningful) connections among words, and verbally **explain** the connections, supports learning the meanings of targeted, self-selected words (Blachowicz et al., 2006; Blachowicz & Fisher, 2000). Semantic feature analysis (Pittelman, Heimlich, Berglund, & French, 1991) and word questioning graphic organizers (Allen, 2001) both illustrate connections among words and concepts.

Instruction that combines definitional information with other active processing—such as adding contextual information about when or by whom the word might be used (Stahl & Fairbanks, 1986), writing and writing to learn activities (Duin & Graves, 1987), or rich manipulation of words (Beck et al., 1983; Lansdown, 1991)—is consistently more effective than definitional instruction alone. Concept of Definition, Schwartz and

Raphael's (1985) instructional strategy, can help students both build meaning for a word and its relationship to other words and help them develop the content for writing good definitional paragraphs. (See Buehl, 2001, or Johns & Berglund, 2002, for brief descriptions of the strategy, examples, and materials to help teachers begin using Concept of Definition in their classrooms.) On the basis of a meta-analysis of studies that compared different types of instruction, Stahl and Fairbanks (1986) concluded that methods involving multiple sources of information led to superior word learning and retention.

Vocabulary instruction in middle and high school should allow deeper explorations of language. Instructional approaches that do this go far beyond vocabulary development as synonyms or use of the glossary and dictionary. Building understanding of language comes through developing knowledge of both the similarities and differences among words and the value of careful word choice when communicating orally or in print. A focus on exploration of the complex dimensions of a word's meaning and the relationships that exist to other words help students not only learn the words but also become better at learning words (Beck et al., 1983).

*Assessing vocabulary and vocabulary development.* There is a "clear vacuum in the research" on how to assess vocabulary breadth, depth, and growth across time. So school faculties can begin with what they have, such as word accuracy scores on grade level passages in informal reading inventories such as *Basic Reading Inventory: Pre-Primer through Grade Twelve & Early Literacy Assessments* (Johns, 2005) or *Qualitative Reading Inventory-4* (Leslie & Caldwell, 2005). And, of course, the word lists in each of these also provide information about students' progress in building sight word vocabularies. Vocabulary subtests on norm-referenced tests such as the *Iowa Tests of Basic Skills* and the *Iowa Tests of Educational Development* also provide information about students' general vocabulary development. These are all good sources of summative data.

Teachers also need formative, up-close assessments if they are to support students' vocabulary development on a daily basis. Techniques such as looking for the words in the unit under study to be used correctly in content area writing, studying students' semantic feature analysis matrices, studying students' Concept of Definition maps, analyzing students' definitional paragraphs, rotating panels of students who serve as this week's "experts on words"—all of these measures go beyond the typical quiz that requires only simple memorization or matching. They require students to demonstrate a deeper level of thinking and understanding, such as generating new examples or applications in writing.

## **Recommendations for Deliberation and Action on the Role of Vocabulary Development in Accelerating Adolescent Literacy and Learning in the Content Areas**

Members of the Iowa Adolescent Literacy Research and Development Team agree with many of the scholars and researchers cited above and have consolidated the implications of their work into the following statement:

*Multiple actions need to be pursued simultaneously to help all students expand their vocabularies and their vocabulary-building strategies. These actions include providing support and opportunities for wide reading in order to build a large sight vocabulary for reading and expressive vocabulary for writing; providing Content Area Read-Alouds to help build vocabulary and knowledge in the content area; direct teaching of a limited number of key words; student involvement in discussing, assessing, and consciously building their vocabularies for reading and writing; and the use of explicit strategy instruction for teaching students vocabulary building strategies.*

An exemplary classroom for adolescents—whether it's art, agriculture, accounting, chemistry, language arts, or self-contained grade four—is one in which all students are expected to and supported in attaining high standards of performance. Students are provided a rigorous curriculum implemented through instruction which includes regular opportunities to discuss content with peers and their teacher (who is both guide and collaborator in the learning process) and regular opportunities to engage in exploration of content area questions. The teacher focuses instruction on key curricular concepts that emphasize depth of knowledge rather than coverage of topics and designs lessons that engage students in building and applying that knowledge within and across content areas, and in life experiences beyond school.

With this brief description of what students and teachers could be experiencing in mind, the following actions can be recommended based on the available research and information:

- Teachers and those who support them should examine how vocabulary is developed in grades four through twelve. What instructional activities or programs are being used? What is known about the effectiveness of these activities or programs on the development of vocabulary and comprehension? How are students actively and consciously involved in building their vocabularies? How many vocabulary building strategies do students have control of and use across content areas? How well does existing instruction

in every classroom match what the scholars above recommend?

- As faculties compare their local data to the findings and implications of the research described above, they ask, “Do changes need to be made to facilitate vocabulary development?”
- If the answer is “yes” or “maybe,” then several actions are indicated:
  - a. A re-examination of curriculum to determine how vocabulary development is addressed.
  - b. Many students may need explicit instruction in how to build their vocabulary.
  - c. Teachers may need professional development and support in involving students more actively in building word meaning and in teaching vocabulary development strategies within their content areas.

Here are a few other actions faculties may consider if vocabulary development, reading comprehension, and learning from reading are high priorities:

1. Students should be encouraged to read extensively and as widely as possible for continued vocabulary growth. Student access to and use of engaging and relevant print materials is essential when seeking to expand the reading vocabularies of adolescents. Opportunities for independent, out-of-school reading should not be overlooked as a way to reduce the achievement gap and increase student vocabulary knowledge.

Are there a variety of books at a range of reading levels in each classroom so that all students can learn from reading? Are there books in other languages for English language learners to enjoy and use as tools for learning? Are the materials in classrooms and the school library at a wide range of reading levels so that most special education students and other students at risk of academic failure can participate in the literate community?

2. The benefits of reading aloud to students of all ages in texts two to three years beyond their own reading level persist beyond the age when they are capable of reading independently. Providing structured Read-Aloud and discussion sessions support vocabulary growth in students.

Are content area teachers sharing curriculum content via brief Read-Alouds that build background knowledge, build vocabulary, challenge students prior knowledge, help students generate new questions to explore, and model learning from text and multiple sources? What is the quality of the Read-Alouds in terms of text selected, curriculum appropriateness, lesson integration, and

opportunities for student discussion and follow-up?

3. Direct instruction of key words may be necessary if students are to learn from textbooks, especially if classroom collections are sparse. New vocabulary words require different levels of intensity of instruction. Words that require direct, intensive instruction should be chosen carefully. This level of instruction aims at bringing students to full ownership of words: being able to use the words in writing and understanding their meaning quickly and automatically when reading.
4. An equally essential instructional component is generative word knowledge that emphasizes the importance of learning new words from a variety of sources and includes instruction in strategies for dealing with words students encounter independently. Vocabulary instruction for adolescent learners should include word study activities to increase student knowledge of root words, their derivation and meaning, as well as the meaning of common affixes. Instructional practices that help students build generative word knowledge include explicit strategy instruction to provide them with a toolkit of strategies for tackling unfamiliar words.
5. Faculties should develop and implement a comprehensive, integrated, schoolwide approach to vocabulary learning. A comprehensive vocabulary program includes engaging in wide reading, intentional teaching of selected words in the content areas, teaching word-learning strategies, and fostering word consciousness. This approach should be based on converging evidence and should include multiple methods for assessing vocabulary development.

We recommend that if faculties discover they need to work on reading volume and strengthening conditions that support learning from reading, they might begin with one of the units of collective study in *Part 1: The Adolescent Literacy Professional Development Series*. Part 1 includes an introductory unit for faculties who have not been engaging in continuous study and improvement around literacy, a unit on reading volume and ways to increase it, a unit on Content Area Read-Alouds, and a unit on building access to print. One of these units, or a combination of them, may be an appropriate beginning if you are concerned about vocabulary development for all students in your setting. *Part II: The Adolescent Literacy Professional Development Series* is being written. Its focus is on explicit strategy instruction for teaching reading comprehension, vocabulary development, and composing strategies to students. For faculties who determine they need professional development in helping students expand their vocabularies and gain more cognitive control of how to do this, the

Adolescent Literacy Research and Development Team members recommend the unit on vocabulary development in the upcoming series.

### **Closing Remarks**

To a large extent, the words we know and use represent who we are. Vocabulary knowledge is knowledge, for knowing a word implies not only a definition but also an understanding of how that word fits into the world. Vocabulary learning is developmental, and it never ends. The expansion and elaboration of vocabularies extend across a lifetime. Vocabulary instruction is the gift of words, a gift that one gives generously to others (Stahl, 2005). Our students are deserving recipients of this gift as we continue to search for methods of accelerating literacy development and increasing our students' vocabulary knowledge.

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## The Role of Fluency in Developing Adolescent Literacy

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Irvin, Meltzer, and Dukes, in *Taking Action on Adolescent Literacy: An Implementation Guide for School Leaders* (2007), state, “Fluent reading can be summarized as the accurate reading of connected text at a reasonable rate with appropriate intonation, pauses, and use of punctuation to make sense of text. A lack of fluency means that the student’s reading rate is too slow and laborious for the student to get much meaning out of longer and more difficult texts. Such decoding and fluency problems cause some students simply not to be able to read the texts”(p. 60).

The National Reading Panel report (2000) defined fluency as “the ability to read text quickly, accurately, and with proper expression.” Pikulski (2006) used *The Literacy Dictionary: The Vocabulary of Reading and Writing* (Harris and Hodges, 1995) to further expand the definition of fluency as “freedom from word identification problems that might hinder comprehension” (p. 85). This definition includes the component of comprehension—of meaning making—which is the core reason for working on fluency.

Fluent silent reading is what is most important for our students in grades four through twelve as they learn from content area texts. However, we cannot hear their silent reading, so we most often use oral reading measures to assess fluency. We can learn much from listening to a student reading aloud: Is her or his sight vocabulary adequate to the task of comprehending the text; are decoding skills used when rare words are encountered; is the pace appropriate to the text, often a conversational pace; and are punctuation marks used as cues for phrasing and expression?



How do teachers in grades four through twelve identify students who are having problems with fluency? Many school districts in Iowa administer reading inventories such as the *Basic Reading Inventory* (Johns, 2005), and the *Qualitative Reading Inventory* (Leslie & Caldwell, 2000) that provide data on students' oral reading fluency, silent and oral reading comprehension levels, and reading strategy use. Many districts administer the *Dynamic Indicators of Basic Early Literacy Skills (DIBELS)* in kindergarten through sixth grade or at selected grade levels to monitor reading rate.

Of course, even without standard measures, it's easy to recognize our students who struggle the most with fluency: they do not want to read, especially not aloud, because they stumble over so many words. But there are other indications that students may need instruction and classroom environments that will strengthen their fluency. For example, do they score poorly on standard reading comprehension tests; do they have trouble selecting the correct response from multiple choice items on content area examinations; do they have trouble writing accurate responses following reading assignments; do they have difficulty retelling or providing details about what they have read; and do they tend to avoid reading? If we have students who exhibit any of these actions, they may have problems with fluency that prevent reading comprehension.

### **What Is the Role of Fluency in Literacy Development?**

While fluency is not a new concept, it has been garnering a great deal of recent attention. When the National Reading Panel report on *Teaching Children to Read* was published in 2000, the authors appeared to elevate fluency to an equivalent status with word recognition and reading comprehension. And while instruction in fluency has traditionally been restricted to the elementary levels, Table 9.1 suggests that fluency may be a major problem for struggling readers beyond the elementary grades (Torgesen, 2004). If you have struggling readers in your setting, reading fluency may well need attention.

The good news is most recent discussions of the instructional needs of adolescents reading below grade level emphasize that most can read words with reasonable accuracy and fluency but struggle to comprehend what they read. In fact, a frequently cited figure (Biancarosa & Snow, 2004; Kamil, 2003) states that no more than 10% of all struggling readers have difficulties with basic word-reading skills that are sufficiently severe to require focused instructional interventions. (See, also, Torgesen et al., 2007).

**Table 9.1**

## FCAT Performance Level—Grade 3

Skill/Ability	FCAT Performance Level				
	1	2	3	4	5
WPM on FCAT	54	92	102	119	148
Fluency percentile	6 <sup>th</sup>	32 <sup>nd</sup>	56 <sup>th</sup>	78 <sup>th</sup>	93 <sup>rd</sup>
Phonemic decoding	25 <sup>th</sup>	45 <sup>th</sup>	59 <sup>th</sup>	74 <sup>th</sup>	91 <sup>st</sup>
Verbal knowledge/reasoning	42 <sup>nd</sup>	59 <sup>th</sup>	72 <sup>nd</sup>	91 <sup>st</sup>	98 <sup>th</sup>
SAT9 percentile	31 <sup>st</sup>	45 <sup>th</sup>	69 <sup>th</sup>	87 <sup>th</sup>	95 <sup>th</sup>

## FCAT Performance Level—Grade 7

Skill/Ability	FCAT Performance Level				
	1	2	3	4	5
WPM on FCAT	88	113	122	144	156
Fluency percentile	7 <sup>th</sup>	25 <sup>th</sup>	45 <sup>th</sup>	82 <sup>nd</sup>	95 <sup>th</sup>
Phonemic decoding	27 <sup>th</sup>	53 <sup>rd</sup>	53 <sup>rd</sup>	74 <sup>th</sup>	84 <sup>th</sup>
Verbal knowledge/reasoning	34 <sup>th</sup>	45 <sup>th</sup>	64 <sup>th</sup>	88 <sup>th</sup>	93 <sup>rd</sup>
SAT9 percentile	31 <sup>st</sup>	51 <sup>st</sup>	68 <sup>th</sup>	86 <sup>th</sup>	94 <sup>th</sup>

## FCAT Performance Level—Grade 10

Skill/Ability	FCAT Performance Level				
	1	2	3	4	5
WPM on FCAT	130	154	175	184	199
Fluency percentile	8 <sup>th</sup>	30 <sup>th</sup>	68 <sup>th</sup>	87 <sup>th</sup>	93 <sup>rd</sup>
Phonemic decoding	18 <sup>th</sup>	27 <sup>th</sup>	45 <sup>th</sup>	56 <sup>th</sup>	72 <sup>nd</sup>
Verbal knowledge/reasoning	30 <sup>th</sup>	60 <sup>th</sup>	66 <sup>th</sup>	84 <sup>th</sup>	89 <sup>th</sup>
SAT9 percentile	25 <sup>th</sup>	44 <sup>th</sup>	62 <sup>nd</sup>	83 <sup>rd</sup>	85 <sup>th</sup>

(Torgesen, 2004)

Students who struggle with fluency often do not enjoy the act of reading. Over time, the sustained effort that is needed to engage in text often impacts students' motivation and the amount of reading they do. As a result, less time spent reading negatively affects their vocabulary development, comprehension, and content knowledge. Thus, when responsible parties begin to inquire into adolescent literacy, especially that of students who struggle, they will want to explore the role of fluency in comprehending text and learning in the content areas.

### **What Is the Current Status of Student Performance in the Area of Fluency?**

There is clear evidence that many middle and high school students are not achieving at the level that is needed to be successful in a society with ever-increasing literacy demands. While fluency data are not systematically collected at the state or national level, the research presents a strong evidence base for the relationship between oral-reading rate and performance measures on reading comprehension in grades one, two, and three (Torgesen, 2005) and a relationship between oral reading rate and reading comprehension for older struggling readers (Torgesen, 2004).

When looking at the National Assessment of Educational Progress (NAEP) reading results across the United States, fourth grade reading achievement has shown recent improvement while eighth grade and twelfth grade scores have remained relatively flat (Kamil, 2003). In general, students' attitudes toward reading and engagement with reading decline as students move up the elementary school grades, until sixth grade when many students have become indifferent to reading (McKenna, Kear, & Ellsworth, 1995).

In international comparisons of reading achievement, U.S. eleventh graders place near the bottom, which contrasts with the rankings in fourth grade where U.S. students place very close to the top. This evidence indicates that many students who read well in early years struggle to maintain this status after fourth grade (Balfanz, McPartland, & Shaw, 2002). Part of their struggle may be due to the time it takes to read the more complex and lengthy text as they move from grades four to twelve.

In 2004–2005, Iowa students in grades four, eight and eleven scored 10 to 20 percentile points higher on the *Iowa Tests of Basic Skills* and the *Iowa Tests of Educational Development* than their national counterparts. While this is a great accomplishment for the state, Judy Jeffrey, Director of the Iowa Department of Education notes:

While we are proud of these achievements, we also recognize that public education faces increasing challenges as it strives to ensure all students are prepared for success after high school. Those challenges include meeting new and evolving expectations from

business and industry, the impact of technology on student learning styles as well as teaching practices, providing more learning opportunities for students, and making more progress toward reduction of persistent achievement gaps (Iowa Department of Education, 2006).

As part of the State of Iowa's Adolescent Literacy Research and Development Team, participants engaged in a deeper study of data related to adolescent literacy of students in Iowa schools. One study examined the reading performance of students in grades six through eight (Latham, 2007). These students attended a K–8 facility in an urban setting. About 98% of them were eligible for free and reduced lunch. The students were administered a grade level passage from the *Analytical Reading Inventory* (Woods, 2006) to determine accuracy levels, reading rates, and comprehension. This district established a goal of at least 90% accuracy, a target rate of 150 words per minute and 80% comprehension. While 91% of the sixth grade students, 85% of the seventh grade students, and 100% of the eighth grade students met the accuracy goal, only a few students per grade level met the fluency and comprehension targets.

Several authors have taken a close look at the status of fluency among adolescents. Torgesen et al. (2007) state, “Although difficulties with reading fluency can be caused by a number of factors (Jenkins, Fuchs, Van Den Broek, Espin, & Dino, 2003), a principal cause is a lack of accurate reading practice (Torgesen & Hudson, 2006).” Students who struggle do so because of uncommon vocabulary in content area texts. They continue, “it is not possible at present to specify precise targets for reading fluency and accuracy in adolescent readers when they are reading grade-level text: We know that extremely poor skills in this area can seriously disrupt comprehension, but we do not know precisely how strong students’ skills in this area need to be before they are no longer a matter of concern. The answer is likely to vary with the individual student and with the nature of the literary tasks he or she faces” (pp. 70–71).

Balfanz et al. (2002) identify three types of struggling readers who enter ninth grade. 1) Between five and ten percent of these struggling readers need massive extra help because their reading levels range from nonreader through grade three. Many of these students lack fluency, have limited reading vocabularies, and employ limited comprehension strategies. These students need a structured intervention program from special education or a reading intervention program such as Second Chance. 2) A larger group of struggling readers enters ninth grade reading at a fifth or sixth grade level. These students will have difficulty learning from some of their content area texts. Teachers of these students may need to provide more background knowledge prior to assignments; provide instruction that systematically builds vocabulary in their content area; provide opportunities

for paired reading, assisted reading, and reading theatre; provide opportunities for discussions among students about their reading; and provide a range of content area materials written at a range of reading levels for students to use as learning resources. 3) The third group of struggling readers can read and comprehend, but they lack the literacy skills to learn independently from reading conceptually dense high school textbooks. Content area teachers will need to support these students in simultaneously learning the content and becoming more proficient as readers, writers, listeners, speakers, and thinkers. This can be accomplished by how they, the teachers, read, write and think about their discipline.

All these findings support the idea that struggling readers at middle and high school levels do not typically need additional support with decoding and word attack skills. However, it is apparent struggling readers do need instructional support with sight vocabulary and appropriate reading pace to read though increasingly complex passages. As students acquire more sight vocabulary, more cognitive resources are freed for comprehension.

### **What Is the Current Status of Fluency Instruction in Classrooms?**

While fluency has gained more attention since the release of the National Reading Panel Report in 2000, it has generally been thought of as a component confined to the elementary grades. Considering the developmental nature of literacy, students who enter grades four and five with good basic fluency do not need large amounts of instructional time devoted to decoding words (Pikulski, 2006). Students who are struggling with fluency would benefit from repeated reading practices to increase both fluency and comprehension (Kuhn & Stahl, 2000).

For students who proceed to grades six through twelve and are continuing to make adequate progress with fluency, wide reading rather than repeated reading may lead to greater improvements in vocabulary and comprehension (Pikulski, 2006). Some scholars question whether the major problem of readers lacking fluency is one of limited reading practice (Allington, 2006; Guthrie, 2004; Kuhn, 2005). Kuhn and Stahl's (2003) review of developmental and remedial instructional practices that increase reading fluency indicate that repeated-reading of the same text does increase fluency, yet they speculated that it might be more a result of additional practice in reading than practice in re-reading the same text. In Kuhn's (2005) comparative study of repeated reading and wide independent reading, she found that *extensive reading of texts matched to students' reading level produced comprehension gains that repeated reading did not, while also improving fluency*. Also, students who struggle with reading read less, preventing the development of a basic sight word vocabulary. This limited sight word vocabulary is a common characteristic of disabled readers after the initial learning-to-read phase (Torgesen &

Hudson, 2006).

However, because concern over fluency has been traditionally limited to the elementary grades, students who lack fluency in middle and high school are not likely to find much instructional support. For these struggling students, it will be important to identify the instructional practices that will expand their sight word and comprehension skills.

### **What Is the Research Base Regarding the Role of Fluency in a Comprehensive Literacy Program for Adolescent Learners?**

Current research suggests that fluency problems may extend into the intermediate and upper grades. Based on his work with struggling readers, Rasinski found that lack of fluency appeared to be the area of greatest impairment in their reading (Rasinski & Padak, 1998). These findings are substantiated by the work of Pinnell et al. (1995) who found that nearly half of the 1,000 plus sample of fourth grade students had not yet achieved a basic level of reading fluency. A deeper look at the study by Torgesen provides additional evidence to support extending the study and practice of fluency to the upper grades (Torgesen, 2006). Torgesen studied the results of the *Florida Comprehensive Assessment Test (FCAT)* used to monitor progress in reading in grades three through ten. In this study, fluency was determined to be a significant component in struggling readers' difficulties in grades seven and ten. In an address on adolescent literacy, Torgesen pointed out "that struggling readers are typically lagging behind in several critical areas." First, he said, poor readers have struggled with reading from the beginning and have acquired many bad habits. Second, they have engaged in much less learning than their grade level peers. Such converging evidence suggests that attention to fluency has the potential to promote gains for both fluency and comprehension among struggling readers.

### **The Influence of Fluency on Comprehension**

Much of the attention to fluency is linked to its influence on reading comprehension. Both decoding and comprehension require significant cognitive resources. According to the theory of automaticity in reading by LaBerge and Samuels (1974), students who have not achieved proficiency in fluency apply most of their cognitive energies to decoding words. By contrast, fluent readers focus their attention on making connections among the ideas and with their background knowledge. Therefore, they are able to focus on comprehension.

### **Assessment Practices**

A large sight vocabulary, skills in using root words and analogies, and good comprehension skills all influence fluency scores. Therefore, it is important that assessment practices used for fluency measure these components. As

the definition of fluency reflects multiple dimensions, so must fluency assessments. A number of techniques can be used in the classroom to assess fluency. Informal reading inventories (Johnson, Kress & Pikulski, 1987), miscue analysis (Goodman & Burke, 1972), running records (Clay, 1972) and reading speed measurements (Hasbrouck & Tindal, 2006) are all assessment procedures requiring oral reading of text and can be used to provide indicators of fluency development. The literacy field continues to discuss appropriate targets for reading rate for students in middle and high school.

We know that average levels of oral reading fluency stabilize at around 150 correct words per minute (see Table 9.2) for students as they enter middle school (Hasbrouck & Tindal, 2006). While collecting data on these rates can provide insights to a student's progress in reading, other, less formal observations can determine whether or not a lack of fluency interferes with comprehension. While measuring reading rate is an efficient and strong indicator of reading fluency, it reflects only one dimension. It is also important to remember that oral reading fluency provides diagnostic data to design instruction to support silent reading comprehension (Pikulski, 2006). Comprehension is our outcome for adolescent readers. Since assessment drives instruction, it is important to implement a comprehensive assessment plan that reflects all dimensions of fluency for grades four and five and for struggling readers in middle and high school.

**Table 9.2**

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Percent Accuracy and Words per Minute, by Fourth Graders, Oral Reading

	Reading Fluency			
	Non Fluent		Fluent	
	Fluency Level 1	Fluency Level 2	Fluency Level 3	Fluency Level 4
Percent Accuracy	94	94	96	97
Words per minute	65	89	126	162

From U.S. Department of Education, National Center for Education Statistics (1995, p. 44).

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### ***Repeated Reading***

One of the most widely used and recommended instructional practices to support fluency is repeated reading. (Kuhn & Stahl, 2000; Rasinski & Hoffman, 2003). The practice provided by repeated reading can lead to gains in fluency, comprehension, and overall reading on the passage at hand as well as other passages not previously encountered (Rasinski, Padak, McKeon, Wilfong, Friedauer, & Heim, 2005). Repeated reading can



also be done in authentic ways. For example, performance activities lend themselves well to repeated reading practices as they provide multiple opportunities for reading, and many students find this type of activity motivating and engaging. Such performances may include activities such as readers theatre, choral reading, and the design and creation of media presentations. Repeated readings are an integral part of these performance activities and are an effective and purposeful means for building reading fluency (Worthy, Broaddus, & Ivey, 2001). Teachers from all content areas are able to implement these types of activities with support and planning (Rasinski et al., 2005). These cross-curricular efforts provide students with even more opportunities for extended reading practice in a variety of genres and text structures.

When considering repeated reading practice for struggling readers at the middle and high school levels, educators will also need to address the amount of time spent in these activities. Allington (2006) suggests that the use of repeated readings occur on a short-term basis, perhaps for two to three week intervals. His goal for repeated reading would be “to help dysfluent readers begin to understand what fluent reading feels like.” After a few weeks, he recommends to try to move from repeated reading to an increase in the amount of reading practice, and to make sure that “struggling readers read more each day than normally developing readers” (Allington, 2006, p. 102).

### ***Wide Reading***

One of the most controversial findings of the National Reading Panel (NRP) report (2000) was in regards to the impact of independent reading on fluency development. The NRP was unable to find experimental studies showing that independent reading led to gains in fluency. However, they stated, “it is not that studies have proven that this cannot work, only that it is yet unproven.” It is important to remember there were significant restrictions on what evidence could be considered for this report. While there were few experimental studies to support this correlation, there is a wide body of evidence as well as professional wisdom to support the practice of independent readings’ impact on fluency.

Cunningham and Stanovich presented impressive results and considerations in regards to the value and impact of wide reading on vocabulary knowledge, comprehension and verbal ability (Cunningham & Stanovich, 1998). Torgesen reminds us that the lack of reading practice affects fluency and states that struggling readers “have sight vocabularies many thousands of words smaller than average readers” (Torgesen, 2006). Allington (2006) also found that wide reading of independent-level materials and guided reading of instructional-level materials are strong instructional practices to develop reading fluency. He also recommends providing



opportunity for struggling readers to read widely (for successful practice) by supplying classrooms with interesting texts at varying levels of complexity. This would be an important consideration at the secondary level in all content areas.

### **Recommendations for Deliberation and Action on the Role of Fluency in a Comprehensive Literacy Program for Adolescent Learners**

When considering the evidence related to the role of fluency in a comprehensive literacy program for adolescent learners, there are a number of actions to consider. For those students who are making adequate progress in the area of fluency, continue with vocabulary development and an emphasis on wider reading. These are good overall literacy practices. It is important for teachers and leaders to have conversations as to how these practices are supporting learning from print.

Additional conversations will be needed about students who are not making adequate progress in the area of fluency. Converging evidence reveals that most struggling adolescent readers do not have decoding issues. For the small percentage of students who do need decoding support, instruction must be provided. Identifying these students is critical in order for them to receive appropriate instruction such as repeated reading and guided oral reading. Implementing these practices will require adjustments to the traditional literacy core found in middle and high school teachers' instructional practices. According to Rasinski et al. (2005):

Students learn what teachers teach...Students who lack fluency entering in to the middle grades are not likely to find much instructional support for their difficulties. If fluency is a problem for struggling middle and high school students, it needs to be taught.

If the school or district has students who struggle with fluency and comprehension, educators should answer the following questions:

- How is fluency represented in our curriculum?
- How do we know whether our students are fluent?
- How will we support our proficient and advanced students so they continue to read and expand their vocabularies and fluency?
- How will we support fluency for our struggling readers?

## Closing Remarks

A synthesis of the research in the area of adolescent literacy presents evidence that student achievement data related to literacy for middle and high school students is not at the level that most wish. When studying the data to determine some of the underlying variables related to struggling adolescent readers, it is clear that fluency may be a factor. When considering the role of fluency, and the impact of this component on overall literacy achievement, it is also important to think of the relationship of fluency to other literacy components. Timothy Shanahan (2006) notes that:

Fluency—or any specific outcome, such as comprehension or phonics skills, that we teach in literacy instruction—is not the whole story. The success of fluency instruction depends not only on the quality of the teaching, but it also depends on the degree to which that quality teaching is embedded in a full agenda of other sound literacy instruction (p. 22).

While repeated reading techniques with teacher guidance and feedback are the most commonly recommended and well-researched approaches to improving fluency, it is important to remember the work of Steven Stahl (2004). Stahl indicated that it really did not matter if repeated reading occurred in the same text or in new text. What seems to matter most for student achievement is the total amount of time spent reading (Pressley, 2006).

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## **The Role of Discussion in the Development of Adolescent Literacy and Content Area Learning**

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*Walking into a middle school or high school hallway during passing time, one cannot help but notice students' voices. Conversations and discussions are occurring up and down the hallway. It seems every student is either talking to someone, talking on the phone, or text messaging someone. Discussion—talk between two or more people about a subject—is occurring. Wait a few minutes and follow these same students into a classroom. Watch as the students are seated and instruction begins. The teacher begins the class by saying, "What did we talk about yesterday?" One person responds to the question. The teacher says, "Good," and then asks students to get ready to take notes. Next, the teacher lectures for 30 minutes, asking a few questions, which are answered by the same two students sitting in the front row. There is little or no discussion between the teacher and the other students or between students in the classroom.*

High literacy includes skill in reading, writing, speaking, listening, and viewing, with thinking as a part of each mode of communication. Discussion is an obvious part of the speaking mode. In this section, the authors describe what is known about its use in classrooms, especially in middle and high schools, about its effects on literacy development, and its use as a learning tool across content areas. An important assumption underpinning this section is the belief that skill in discussion—skill that includes the ability to attend to the comments and perspectives of others and use this information with one's own prior knowledge in forming responses and developing ideas—is an important communication skill which would be an asset to any person at school, at home, at work, or at play.

The following definition of discussion will help readers reflect on the current state of classroom discourse in their settings and compare it to what the researchers who have studied discussion and its role in teaching and learning advocate: *“thoughtful and sustained examination of a given topic over a period of time involving substantial contributions and reflections by both teacher and students”* (Nystrand & Gamoran, 1993, p. 99). Such discussions are characterized by relatively few questions—and most of those are focused on clarifying or elaborating ideas, not on quizzing for a pre-determined answer—with students and the teacher taking up or building on each others’ ideas and perspectives.

In many middle and high school classrooms, there are few opportunities for such discussions. Alvermann and her colleagues (1990; 2002), as well as others who have conducted observational studies (Goodlad, 1984; Webb, Nemer, & Ing, 2006), identify the teacher-centered, or traditional, transmission of knowledge approaches to instruction as the most common ones in use in middle and high schools. In teacher-centered or transmission-based classrooms, there is little opportunity for discussion. To build in-depth knowledge of subject matter, most students need frequent opportunities to discuss and form questions about curriculum content, relate it to prior knowledge, explore different perspectives and applications, and interact with each other and more knowledgeable others (the teacher as guide, coach, and facilitator). Depending on the curriculum and the goals set by teachers and students, both teacher-centered and participatory approaches are necessary at times. Both can be complementary tools in promoting student learning of subject matter (Hogan, Nastasi, & Pressley, 1999; Jetton & Alexander, 2004).

Although the role of discussion has not received as much attention in literacy research as reading and writing have, research in this area is beginning to see increased attention, particularly in the area of adolescent literacy. The *Iowa Core Curriculum* (Iowa Department of Education [IDE], May 2006), provides the following rationale for the increased attention to discussion:

*By its nature, literacy is social. In being effective critical members of a literacy community, students collaborate with others. Whether it is engaging the ideas of an author who lived centuries ago or actively debating ideas about their contemporary lives with their peers, this collaboration helps students gain an appreciation of themselves, others, and the world. There is a cumulative advantage to the reciprocity of sharing ideas. The more students engage in literacy tasks, the deeper becomes their conceptual understanding and motivation to learn. (p. 26)*

If our goal as educators is to help all students understand and apply the



content we are teaching, we must begin to look at a variety of approaches to instruction and examine the role of discussion in learning and in the development of adolescent literacy.

### **What Is the Current Status of Discussion in Classrooms?**

What do careful observers see and hear when they study teacher to student and student to student verbal interactions during class at the secondary level? Here are some findings from two large-scale studies that investigated classroom discussion in English classes. In recording evidence of classroom discourse during observations, the authors of both studies identified as discussion any free interchange of information that lasted longer than 30 seconds and occurred between at least three participants, one of whom may be the teacher.

Nystrand's (1997) study included over 100 eighth and ninth grade classrooms in Wisconsin and Illinois. What did instructional talk look like over the course of the year?

- Discussion accounted for less than one minute of class time per period.
- Teachers asked 92% of the questions in eighth grade and 91% in ninth grade classrooms.
- Questions without predetermined answers (authentic requests for additional information, clarification, or direction) represented 10% of the eighth grade questions and 27% of ninth grade questions.

The findings from Applebee, Langer, Nystrand, & Gamoran (2003) are similar. Their investigation of discussion and its relationship to the development of knowledge and skill in literacy included 64 middle and high school English classrooms in 19 schools in five states. Most of the classrooms studied were grades seven and eight for the middle schools and grades ten and eleven for the high schools. Each class was observed four times over the school year.

- Discussion averaged 1.7 minutes per 60 minutes of class time.
- In low track classrooms, discussion averaged 42 seconds per 60 minutes; in high track classrooms, discussion averaged 3.3 minutes per 60 minutes.
- In low track classrooms, the maximum average number of minutes of open discussion was 3.7; in high track classrooms, the observed maximum was 14.5 minutes.
- There was no significant difference in amount of discussion between middle school and high school.
- Questions without predetermined answers (authentic requests for additional information, clarification, or direction) represented 19% of the questions.

In their “Results” section, Applebee et al. (2003) make this statement:

Lower track students are taught with significantly less emphasis on envisionment-building [meaning-making] activities; extended curricular conversations; connections among reading, writing, and discussion activities; revising activities; and homework. And they are in classrooms where the class as a whole is less likely to complete assigned reading and writing tasks. Considering, in addition, lack of open discussion time, we see that lower track classes receive significantly less instruction of the kinds that previous studies suggest contribute to higher literacy performance. (p. 710)

It is easy to see from these two studies what little discussion occurred in most of these classrooms.

Today, many literacy scholars and researchers agree with or incorporate Vygotsky’s (1962/1986, 1978) view of language as a social and communicative activity into their own theories of language learning and how it develops. In this view, students become literate by engaging in interactive events. Many practitioners also hold this view, but there is much variance between what literacy scholars and researchers describe as interactive instruction and what is present in classrooms.

Note: Many readers may be familiar with excellent debate programs in their local secondary schools. However, in most settings, a very small percentage of the student population participates in these programs. So, while such programs likely help their participants become skilled discussants and are worthy of support, they are a very small part of accelerating adolescent literacy for all students.

### **What Is the Research Base Regarding the Role of Discussion in Adolescent Literacy and Content Area Learning?**

Over the last 25 years, the work of three scholar-researchers: Arther N. Applebee, Judith A. Langer, and Donna E. Alverman has been closely followed by knowledgeable practitioners—curriculum directors, teachers, and other educators—working to improve students’ reading and writing performance at the secondary level. It’s not that many others have not written about adolescent literacy, but these three scholars have developed and led studies of literacy in grades four through twelve classrooms, focusing on teacher and student interactions, the nature of effective instruction, and effects on student performance. Applebee’s (1981) study of the teaching of writing in high school included a national questionnaire as well as classroom observations of 48 ninth and eleventh grade teachers, 11 from English, and 37 from across the content areas. Alverman (1987) and her colleagues conducted an 18 month observational study of 24 science,

social studies, literature, health, and human development teachers from rural, suburban, and urban school districts. Langer (1993) conducted a series of studies of reader-based discussions in literature in the late 1980's. These programmatic researchers have continued to study instruction and its effects on literacy and learning. The results of their past and current work direct practitioners to take a closer look at discussion-based approaches to teaching.

The classroom discussion advocated by the scholars and researchers cited here is very different from the typical pattern of classroom discourse in which the teacher lectures, or student reading is followed by teacher-directed questions about what has been studied, individual students are called on to respond, and teachers affirm or correct the response. This pattern of verbal interaction is the most common form of classroom discourse in the United States and is often referred to as the recitation pattern (Mehan, 1979; Sirotnik, 1983) or (Applebee et al., 2003; Wade & Moje, 2000; Wilkinson & Silliman, 2000) as the IRE pattern:

- I The teacher *initiates* or *interrogates*
- R A student *responds*
- E The teacher *evaluates*

Student outcomes for this traditional pattern of classroom discourse “include a passive orientation to learning, an emphasis on the reproduction of information, and the understanding that evaluation is the exclusive responsibility of teachers” (Wilkinson & Silliman, 2000, p. 344). These outcomes are contradictory to what the national content area organizations (e.g., National Council of Teachers of Mathematics (2000); National Science Teachers Association (1996); National Council for the Social Studies (1996); the National Council of Teachers of English and the International Reading Association (1996); and the *Iowa Core Curriculum* (IDE, May 2006) identify as goals or outcomes for curriculum and instruction.

*The Relationship Between Student Performance in Literacy and Discussion.* While research focusing on the development and use of discussion is limited, the knowledge base is growing.

Nystrand's (1997) study of over 100 eighth and ninth grade classrooms in Wisconsin and Illinois investigated which features of classroom discourse were associated with improved student performance. Nystrand used a pretest of literacy performance and end-of-year measures tailored to the literature selections that each class had studied. The features of classroom interaction that were significantly related to improved student performance in the spring included:

- more time for discussion;
- more use of questions that moved the discussion forward instead

- of “testing” what students know;
- more fluid verbal interchanges in which teachers’ questions built on or extended student comments (e.g., instructional conversations).

In the Applebee et al. (2003) study of 64 English classes in 19 middle and high schools in five states mentioned earlier, student performance was assessed in the fall and spring with three writing tasks designed to measure aspects of reading comprehension, analytical skills, and general writing competence. Instructional variables that were significantly related to higher end-of-year literacy performance were

- presence of and more time for discussion and for exploring ideas that were generated during discussions (classroom level effect size: .53);
- higher levels of academic work expected of students (classroom level effect size: .53).

Both better and poorer students benefited equally from discussion-based approaches and from high academic demands, with student ability analyzed both by track placement and students’ grade point averages in subjects other than English. To prevent misinterpretation of what is meant by high academic demands, the authors of this study used these indicators as evidence of *high academic demands*: how often students completed their reading and writing assignments, 0 for “Never” to 6 for “Every Time;” hours of English homework per week, 0 to 4 or more; and student self-reports of the types of revisions they did in their writing, i.e., content—ideas, development, or organization; or mechanics—spelling, punctuation, grammar, and usage.

Students who are English language learners (ELL), who are from low socioeconomic backgrounds, or who are labeled as “at-risk” because of their achievement, fare especially poorly in classrooms where traditional instructional practices form the primary teaching mode (Guitierrez, 1993; Marshall, Smargorinsky, & Smith, 1995). As Applebee and his colleagues (2003) emphasize:

Such students typically do much better when instruction builds on previous knowledge and current ideas and experience, permits students to voice their understandings and refine them through substantive discussion with others, and explicitly provides the new knowledge and strategies that students need to participate successfully in the continuing discussion. (as cited in Applebee et al., 2003, p. 689)

Applebee and his colleagues also provide a brief overview of research studies and syntheses that have focused on the effects of discussion on

the reading comprehension of difficult texts: for example, the work on “Think-Alouds” by Kucan and Beck (1997); constructing explanatory answers, from Pressley et al. (1992); and Questioning the Author (QAR) from Beck, McKeown, Sandora, Kucan, & Worthy (1996). Applebee et al. remind readers that each research team developed its own vocabulary for describing the discussion routines used in the instructional strategies they were studying. However, across this line of work:

The results converge to suggest that comprehension of difficult text can be significantly enhanced by replacing traditional I-R-E patterns of instruction with discussion-based activities in which students are invited to make predictions, summarize, link texts with one another and with background knowledge, generate and answer text-related questions, clarify understanding, muster relevant evidence to support an interpretation and interrelate reading, writing, and discussion. (p. 693)

In 2000 and 2001, Langer studied the settings and classroom practices of 44 English teachers in 25 schools in four states. Common characteristics of schools whose students regularly “beat the odds” on a large scale assessment of English achievement included

- an emphasis on depth rather than breadth of knowledge;
- use of discussion to develop depth and complexity of understanding;
- overt teaching of knowledge and strategies needed for successful participation in reading, writing, and discussion.

Gamoran and his colleagues (1995) reported that Honors English classes spend more time in discussion than lower level classes. However, when low-track students have teachers who hold high expectations and are also given the opportunity to respond to more rigorous work, they make more progress than when they are given a diluted curriculum and less opportunity to engage with it. Results from Applebee et al. (2003) also indicate that “students in classrooms with high academic demands and more emphasis on discussion-based approaches show higher end-of-year literacy performances *across track levels*” [italics added] (p.716).

*Examples of Instructional Models and Literacy Programs That Include Discussion as a Key Component.* A number of successful teaching strategies and literacy programs include student discussion and collaborative learning and/or teacher-student discussions as essential components. For example, strategies such as reciprocal teaching (Alfasi, 1998; Brown & Palinscar, 1984; Doolittle, Hicks, Triplett, Nichols, & Young, 2006); programs such as Concept-Oriented Reading Instruction—CORI (Guthrie, Wigfield, & Perencevich, 2004; Swan, 2004); and programs for

struggling adolescent readers such as Second Chance Reading (Showers, Joyce, Scanlon, & Schnaubelt, 1998).

A number of Iowa educators and parents are familiar with Second Chance Reading. Second Chance Reading (SCR) is a program designed to accelerate the reading achievement of struggling middle and high school readers; it utilizes discussion in a cooperative learning framework that is embedded within each strategy in which students engage. SCR teachers engage students in discussion about reading to enhance comprehension as well as increase student engagement.

While discussion and collaborative learning are not the only components of Second Chance, they are integral ones. Reading achievement results for Second Chance Reading in the Des Moines, Iowa, Public Schools for the 2003–2004 school year are shown in Table 10.1. These results are from the *Stanford Diagnostic Reading Test*. According to the *Second Chance Training Manual* (IDE, 2006, June):

Students were pre and post tested on the *Stanford Diagnostic Reading Test (SDRT)*, a standardized measure of vocabulary knowledge and comprehension skill. District students also took the *Iowa Tests of Basic Skills* in the fall as well as a pre and post test on the district's *Criterion Referenced Test for reading (CRT)*. *ITBS* and *SDRT* correlated .55 for full year students, who entered SCR with the lowest reading scores, and .61 for one semester students, who entered the program on average one and one-half years ahead of students in the year-long program. (pp. 2–13)

Typically, struggling readers attain less than a year's growth on standardized tests. However, as can be seen in Table 10.1, Second Chance students far exceed these typical results. A mean gain of 2.1 years for Second Chance students demonstrates a significant acceleration in reading comprehension. Second Chance Reading has been implemented in many schools across the state of Iowa through the Teacher Development Academies. (For further information regarding Second Chance Reading in Iowa, go to the Iowa Department of Education home page at <http://www.iowa.gov/educate/>).

**Table 10.1**

Mean SDRT Growth for SCR Program in Normal Grade Equivalents  
Full Year Regular Education with Mainstreamed Special Education

Sample	N	Vocabulary			Comprehension		
		Pre	Post	Growth	Pre	Post	Growth
Regular Education	585	5.8	7.2	1.4	4.9	7.0	2.1
Mainstreamed Special Education	52	5.1	6.2	1.2	4.8	6.7	1.9
Male	339	5.8	7.3	1.5	4.5	6.7	2.2
Female	305	5.6	6.9	1.3	5.4	7.3	1.9
Free/Reduced Lunch	286	5.7	7.2	1.5	5.1	7.1	2.0
English Language Learners	42	4.7	5.5	.8	4.5	5.6	1.1
Ethnic Sub-groups							
White	380	6.0	7.4	1.3	5.2	7.3	2.0
Black	134	5.2	6.7	1.5	4.6	6.5	1.9
Hispanic	75	5.1	6.4	1.3	4.4	6.9	2.5
Asian	25	5.8	8.0	2.2	5.1	7.6	2.5
Indian	(5)	(4.6)	(6.4)	(1.9)	(3.5)	(5.9)	(2.4)

*Using Discussion to Support Learning.* Other than research on cooperative learning and the role of discussion in cooperative learning approaches, much of the school-based research focusing specifically on discussion has been conducted in English, language arts, and reading classes. Discussion has been studied as a method for helping students comprehend difficult text, understand the perspectives presented in the literature they read, increasing students' cognitive engagement with text and content, and as a scaffold in the development of reading comprehension and writing skills. Based on the studies and syntheses of research cited above, student performance in literacy has improved when discussion-based approaches are used skillfully for any of these purposes.

However, designing instruction so that students engage in disciplinary conversations—whether they be about changes in commerce and how that affects one's hometown, forms of renewable energy, innovations in auto mechanics, accounting procedures and ethics—are encouraged across content areas. Helping students learn the discourse, both the language and



the reasoning, in one's discipline is necessary if they are to achieve competence (Alexander & Jetton, 2003).

The authors of *How People Learn: Brain, Mind, Experience, and School* analyzed studies of effective teaching in history, mathematics, and science. One of the general principles of learning they developed from their analysis of successful examples of teaching biology and physics was the value of class discussion for “developing a language for talking about scientific ideas, for making students’ thinking explicit to the teacher and to the rest of the class, and for learning to develop a line of argumentation that uses what one has learned to solve problems...” (Bransford, Brown, & Cocking, 1999, p. 171).

Some readers are familiar with the effects of some of the more powerful cooperative learning models on student performance in the content areas. For example, the use of group investigation in high school history courses had an effect size of 1.6 when compared to student performance in classrooms that used the traditional whole class approach. In the traditional whole class approach, lectures and recitation and less opportunity for student-to-student and teacher-student discussions occurred more (Sharan & Shachar, 1988). While discussion is not the only component that makes group investigation a successful model of teaching, it is an integral one and has promise for broad application across the content areas.

*Thinking about the Nature of Effective Discussions.* While the ability to engage in thoughtful discussions is a valuable personal communication skill and the use of discussion-based approaches to teaching and learning has proven potential, all discussions are not necessarily effective. Langer (1995) examined teacher and classroom practices that support effective and appropriate discussion. In her investigation of over 50 teachers who used a wide range of discussion-based approaches in large and small groups, these classroom conventions and practices were important in helping students develop understanding:

- Treat all students as capable: they have important understandings and are potential contributors to discussion.
- Use discussion to develop understandings rather than test what students know.
- Assume that questions are a natural part of learning.
- Help students learn to examine multiple perspectives.



## **Recommendations for Deliberation and Action on the Role of Discussion in the Development of Adolescent Literacy and Content Area Learning**

Members of the Iowa Adolescent Literacy Research and Development Team agree with the scholars and researchers cited above and have consolidated the implications of their work into the following statement:

*Discussion is an important communication skill; it supports the development of higher level reading and writing skills; and it is a scaffold for learning across the content areas.*

Colleagues are encouraged to think about the development and role of discussion in their settings.

An exemplary classroom for adolescents is one in which all students are expected to and supported in attaining high standards of performance. Students are provided a rigorous curriculum implemented through instruction which includes regular opportunities to discuss content with peers and their teacher, who is both guide and collaborator in the learning process. The teacher focuses instruction on key curricular concepts that emphasize depth of knowledge rather than coverage of topics and designs lessons that engage students in building and applying that knowledge within and across content areas and in life experiences beyond school.

With this brief description of what students and teachers could be experiencing in mind, the following actions can be recommended based on the available research:

- Teachers and those who support them should examine the use of discussion in classrooms. How much discussion is occurring? How is it used to support the comprehension of difficult text? How is it used to support learning across the content areas? Teachers should then compare their local data to the findings and implications of the research described above. Do changes need to be made to facilitate student learning?

If the answer is “yes” or “maybe,” then several actions are indicated:

- a. A re-examination of curriculum to focus on depth and breadth of knowledge, and which concepts and skills are of most worth, because discussion and in-depth understanding cannot coexist with a focus on coverage. The Iowa *Core Curriculum* provides a good resource to schools who wish to re-examine their curriculum in this fashion.

- b. Many students will need to be taught strategies for participating in integrated reading, writing, and discussion activities as tools for learning in the content areas, not just in English classes.
  - c. Teachers will need professional development and support in incorporating more discussion-based approaches into their instructional repertoire.
- Is tracking in middle and high schools conducive to high academic standards and rigorous curriculum for all students? Low track students make more progress when they are given the opportunity to respond to and engage with a more rigorous academic curriculum (Gamoran, 1993).

Discussion-based approaches will enhance comprehension for all students, especially those students who typically struggle in traditional classrooms and are typically provided with fewer opportunities for discussion: English language learners, low socioeconomic status students, and other students at risk for academic failure.

*Ideas to Ponder in Relation to the Scarcity of Discussion in Classrooms.* Studies indicate that the integration of discussion into reading and writing improves student achievement in those areas, and documents/studies describe how discussion serves as a tool for learning science, mathematics, and history; nevertheless it is rare in most fourth through twelfth grade classrooms. Some of the most common hypotheses include tradition—how teachers were taught and what students, administrators, parents, and communities expect of teachers as authorities and transmitters of knowledge (Marshall, Smagorinsky, & Smith, 1995); lack of depth of content area knowledge by teachers that makes it difficult to facilitate effective discussions (Jetton & Alexander, 1997); lack of knowledge and skill in using discussion and instructional strategies that include discussion (e.g., cooperative learning strategies such as cooperative inductive models, group investigation, Reciprocal Teaching, Book Talks, concept attainment, inquiry); and the value placed by many administrators and tests on “coverage,” combined with the belief that lectures are more efficient teaching tools than those instructional strategies that require more student discussion and engagement with the content. The question Mehan posed in his 1994 essay on “The Role of Discourse in Learning, Schooling, and Reform” is pertinent: How well can students who have experienced years of passive participation and conformity to adult authority function in a democratic society?

## Closing Remarks

At the beginning of this section, a typical classroom experience was described. Imagine, now, a biology classroom in which the students have been focusing on life science and studying the interdependence of organisms and the use of the scientific method.

*The teacher begins the class by reading a short article from the newspaper describing how residents in a southern Iowa community are noticing a large number of eagles flying near roadways looking for and eating road kill. The teacher then asks the students to talk to their partners and record questions they have about this article based on their knowledge of the habitat and eating habits of eagles. In partner groups, students begin talking about the article and discussing and recording their questions to share with the class. Partner groups share their questions and post them on a Question Board. Next, the teacher provides students with a wide variety of resources to look for answers to their questions. These resources include non-fiction books, magazine and newspaper articles and online sources. Students are asked to investigate their questions by working as partners to find answers to their questions and write an initial claim as to the reasons eagles are looking for road kill as a food source.*

*As students work in partners to find answers to their questions, they discuss the text with one another, write answers, and discuss a claim based on the text they are reading. The teacher moves between groups as a coach and collaborator, assisting those who are struggling to find answers, providing additional resources as needed, commenting about something new she has learned as a result of the information a student finds, etc. Students are reading, writing, and discussing. They are engaged with one another and with text for the entire class period. As the bell rings, students are still discussing their findings. The biology teacher promises the students that they will have additional time to discuss and write claims tomorrow before sharing them with the entire class.*

This experience is vastly different for students than the example shared at the beginning of this section and demonstrates how a content area teacher can engage all students through an investigative approach utilizing discussion, reading, and writing.

*Thoughts on Professional Development and Support for Teachers and Students.* If teachers move to incorporate discussion-based approaches into their classrooms, they will need quality staff development that focuses on theory, rationale, and models for quality instruction for all students. Whether they decide to simply provide time for discussion or decide to use selected teaching models, instructional strategies, or activities such as discussion webs (Alvermann, 1991; Alvermann & Phelps, 2005), group

investigation or role playing (Joyce, Weil, & Calhoun, 2004), inquiry (Bruce & Bruce, 1992), structured academic controversy (Johnson & Johnson, 1999), or explicit strategy instruction that includes students' explanation of how and when they use a particular strategy (Duffy, 2003), teachers and students will need support.

Teachers eager to use discussion have often abandoned the effort for these reasons: students have not done the reading, writing, or investigation in preparation (this relates to high academic standards); students wander off topic in non-productive directions; and it "takes so much time." It is easy to understand the lure of lecture, recitation, or I.R.E approaches because so much can be addressed in a short amount of time. However, if these approaches are predominantly the ones used, students have less opportunity to conceptualize and deepen their understanding of the content. When students are encouraged to discuss text, form and investigate questions, and solve problems together, engagement increases and the role of the teacher often changes. However, there is much cultural press in schools and beyond that supports current instructional practice.

In order to meet the challenges of the global economy, all students in our schools need increasingly sophisticated levels of literacy. They need to be able to collaborate with others, demonstrate higher order thinking skills, and have sophisticated problem solving skills. Using discussion-based approaches helps provide students with the communication skills they need as literate members of society.

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## **The Role of Reading Comprehension in the Development of Adolescent Literacy and Content Area Learning**

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Reading is a very special type of interface with the environment, providing the readers with unique opportunities to acquire declarative knowledge. The world's storehouse of knowledge is readily available for those people who read, and much of this information is not usually attained from other sources. Personal experience provides only narrow knowledge of the world and is often misleadingly unrepresentative. (Stanovich, Cunningham, & West, 1998) p. 280

Reading development occurs along a continuum. For many years, the focus of reading instruction was teaching students to "learn to read" in grades one through three. Once students were in middle and high school, the general consensus was that there was no need for further instruction in reading because most students knew how to read, and the emphasis was on having them "read to learn." Today, literacy scholars and research on reading development no longer support this dichotomy. Instead, converging evidence indicates that "the processes of learning to read and reading to learn are inextricably tied together" (Jetton & Alexander, 2004, p. 19). Even the most skilled readers will struggle to make sense of text at some point in their lives.

Adolescents are expected to comprehend a wide variety of text. As students move from elementary to middle to high school, the texts they encounter become increasingly difficult. Expository text (which includes textbooks) has greater challenges than narrative text. These challenges include longer passages, more abstract logical causal arguments, and more complex and

varied structures (Kucan & Beck, 1997). Because of these challenges, “guidance is needed so that reading and writing develop along with adolescents’ ever increasing oral language, thinking ability, and world knowledge,” (Moore, Bean, Birdyshaw, & Rycik, 1999, p.4). The best guidance for these challenges comes from content area teachers who are skillful learners within their domain.

Most content area teachers do not consider themselves to be reading or literacy teachers. However, because so much of the language and knowledge of each domain is communicated through written language, reading is considered a “threshold domain” (Jetton & Alexander, 2004, p. 17). This simply means that competence in reading is required for learning in all content areas.

Each content area and academic domain has specific literacy processes and skills that are integral to successful learning. For example, mathematicians understand how to read and interpret charts, graphs, and formulas in order to solve a set of problems. They think like mathematicians. The same is true for other domains. History teachers think like historians; science teachers think like scientists. Each content area teacher has an understanding of the thinking processes and strategies that are necessary for success in his or her content area. In other words, they have metacognitive understanding—the ability to “think about and control their own learning”—of the strategies necessary for success with their content (Vacca & Vacca, 2005, p. 76).

As education enters the 21<sup>st</sup> century with the critical task of providing students with the competencies needed to keep pace with the cognitive, digital, and global demands of a rapidly changing information age, adolescent literacy is being given some long-overdue attention. Current data on the status of literacy achievement among adolescents creates a sense of urgency for attention, funding, and policy support.

The good news is that almost all of the “problems” with adolescent literacy can be “fixed” through curriculum and instruction. While many older students are able to read words accurately, they often lack the strategic processes necessary to comprehend a wider array of increasingly complex texts. Additionally, many students who have experienced success in reading narrative texts often struggle to comprehend the informational texts they encounter in different subject areas. Along with this, motivation for reading tends to decline after the early grades, especially for those who have continually struggled to comprehend text. Digital technologies have significantly changed the ways in which students access and communicate information. These problems and challenges can all be successfully addressed through the range of available instructional strategies. Our

greatest challenge may be designing curriculum and instruction that both teaches and engages students.

### **What Is Comprehension and What Is Its Role in Literacy Development?**

Comprehension is a process in which the reader constructs meaning from and interacts with text in a purposeful and active manner (Harris & Hodges, 1995). The RAND Study Group on Comprehension (RAND) defined it as the process of simultaneously extracting and constructing meaning (2002). Both definitions describe comprehension as a multi-faceted cognitive process that encompasses many elements. These elements include the reader and all the knowledge and experiences he or she brings to the act of reading the text, printed or digital, and all the cognitive processes the reader applies while interacting with and reflecting on text. Highly skillful readers use text and apply comprehension processes and strategies fluidly: they read with purpose, which may be for pleasure, to learn new information, or a combination; they have a toolkit of cognitive strategies and routines to help them if they have difficulty understanding the text; and they have a sense of efficacy from reading, i.e., they know they will gain knowledge or experiences from their reading. For some students, the use of reading comprehension strategies comes easily and continues to develop steadily as they mature. Many other students do not apply these strategies, nor are they aware they need to.

Comprehension of text is essential to reading and learning across all content areas and academic domains. For students who struggle the most as readers, explicit and sustained instruction in the application of comprehension strategies is needed. Because of the role of reading in developing adolescent literacy across the content areas, responsible parties should investigate both the progress of proficient readers as they encounter increasingly complex texts and the effects of interventions being used to support struggling readers in grades four through twelve.

### **What Is the Current Status of Student Performance in the Area of Comprehension?**

Student performance in literacy in the United States is not where most would like it to be. In grades four and above, many students struggle with ever-increasing literacy demands. It would be a disservice to them to dilute the curriculum content; this would hinder their path to becoming engaged and successful future citizens.

Many students who were making adequate progress through the elementary grades begin to struggle with reading dense content material as they enter middle grades. The text structures and modes of discourse (how the material is presented in text and in lectures) in textbooks and other

informational texts present comprehension challenges for many adolescent readers. Students are also learning many more unfamiliar concepts. While in kindergarten through grade three, students were learning and applying more familiar concepts as they studied weather patterns, animal characteristics, and markets around the world. In grades four and above, students are expected to learn and/or apply many more unfamiliar concepts, such as wave theory, using algebraic equations as tools for understanding and solving real-world problems, and identifying flaws in accounting systems.

Students with a history of reading difficulties have these same problems, and more. They read infrequently because reading is not a successful experience, and they take little knowledge and experience away from the “task.” The cumulative effects of doing little reading result in the lack of the background knowledge and vocabulary necessary to understand subject matter texts (Sweet & Snow, 2003).

When looking at *National Assessment of Educational Progress (NAEP)* results from across the United States, fourth grade achievement in reading comprehension has shown recent improvement while eighth grade scores have remained flat, and twelfth grade scores have declined slightly (Kamil, 2003). According to the U.S. Department of Education, 80% of high school dropouts are poor readers (cited in Irvin, Buehl, & Radcliffe, 2007).

The large gap in reading achievement between students of different demographic groups persists (RAND, 2002). In international comparisons of reading achievement, U.S. eleventh graders place near the bottom, which contrasts with rankings in fourth grade where U.S. students place close to the top. This evidence indicates that many students who read well in the early years struggle to maintain this status after fourth grade (Balfanz, McPartland, & Shaw, 2002).

However, in 2004–2005, Iowa students in grades four, eight, and eleven scored around 10 to 20 percentile points higher on the *Iowa Tests of Basic Skills (ITBS)* and the *Iowa Tests of Educational Development (ITED)* than their national counterparts. While this is a great accomplishment for the state, Judy Jeffrey, Director of the Iowa Department of Education notes:

While we are proud of these achievements, we also recognize that public education faces increasing challenges as it strives to ensure all students are prepared for success after high school. Those challenges include meeting new and evolving expectations from business and industry, the impact of technology on student learning styles as well as teaching practices, providing more learning opportunities for students, and making more progress toward reduction of persistent achievement gaps. (Iowa Department of Education, 2006, p. iv)

While the majority of Iowa's adolescents out-perform their national counterparts, many national trends are mirrored in the Iowa data. For example, the state mean for fourth grade in 2004–2005 was about eight points higher than the mean at grades eight and eleven on the *ITBS* and *ITED* tests. In 2005, the National Center for Educational Statistics reported Iowa's reading scores in the *NAEP* as follows: only 33% of Iowa's fourth grade students tested as *proficient* or *advanced* and 34% of eighth grade students tested *proficient* or *advanced*. The *ACT*, the most widely used college entrance exam in Iowa, reports that in the last ten years, Iowa's national rank has slipped from tied for first with Wisconsin in 1991 to third place in 2005.

### **What Is the Current Status of Reading Comprehension Instruction?**

In identifying variables for improving adolescent literacy, Shanahan (2004) synthesized the research that supports the importance of instructional time. The findings are very consistent—increasing instructional time results in increases in student achievement. Providing instruction in the area of comprehension can be a challenging task because students approach text with varying degrees of knowledge and experience and the texts they encounter in grades four through twelve vary widely in type and complexity. Additionally, while many middle schools continue to have reading and language arts classes, most high schools do not have separate formal classes to support literacy development.

Greater attention has been given to the idea of comprehension instruction based on a classic study in the late seventies by Durkin (1978/1979) who revealed that very little comprehension instruction was taking place in classrooms. Observations indicated that teachers primarily assigned or assessed comprehension as opposed to teaching students to independently use and apply strategies to strengthen and enhance it. While this study had great impact on renewed and continuing research of comprehension instruction, research studies twenty years later still indicate that very little instructional time is being devoted to teaching students how to comprehend text at the elementary or secondary levels (Pressley, Wharton-McDonald, Hampston, & Echevarria, 1998).

Current practices often mirror the IRE model—Initiate, Respond, Evaluate. In this model, after an assigned reading, the teacher initiates a question, calls for a response from a student, and evaluates the accuracy of the response. While this model gives the teacher assessment information as to whether the student comprehended the text passage, it does little to provide instruction on how to comprehend. Comprehension instruction should focus on teaching students how to construct meaning from text rather than simply answering questions about the meaning established by the author (Pressley et al., 1992; Pressley, 2002). This presents challenges to subject area

teachers and upper elementary teachers who have not had courses or professional development in teaching reading or in teaching metacognitive strategies for reading comprehension.

### **How Can Reading Comprehension Be Strengthened in Grades Four through Twelve?**

Researchers and educators have long been interested in how knowledge develops and in how what we know about our own thought processes impacts comprehension (National Reading Panel, 2002).

Ensuring that proficient primary grade readers continue to learn and make good progress in literacy and getting to the underlying causes of older readers' comprehension difficulties calls for a thorough review of instructional practices in relation to students' literacy needs. Good instruction is the most powerful means of developing highly proficient readers and preventing reading comprehension problems.

### ***What Do We Know about How to Teach Students to Be Good Readers?***

Comprehension of text involves the use of cognitive strategies. There is much converging evidence on the cognitive strategies good readers use, instructional activities that teachers can use to support students in using cognitive strategies, and the overall attributes of effective comprehension.

Cognitive strategies are processes successful independent readers use to create meaning with text. Much of the research on reading comprehension has been designed to identify how proficient readers construct meaning from text (Nokes & Dole, 2004; e.g., Pressley & Afflerbach, 1995). In 1991, using their work and that of colleagues, Pearson, Roehler, Dole and Duffy identified a list of key strategies that distinguish proficient readers from struggling readers.

Good readers tend to

- activate and use relevant prior knowledge to make sense of text;
- monitor their comprehension as they read and repair comprehension when it breaks down;
- determine the most important information in a text passage;
- attempt to synthesize information across large pieces of text;
- make inferences;
- continuously ask questions as they read.

With the goal of improving the status of reading achievement for students, it is important to note the findings of the RAND Reading Study Group (2002) on comprehension. The authors of this report indicate that the explicitness with which teachers teach these cognitive strategies makes a difference in

learner outcomes, especially for students who are low achieving (RAND, 2002). When readers are given explicit instruction in the use of cognitive strategies, they make significant gains on measures of reading comprehension over students trained with conventional instructional procedures (Pressley et al., 1992; Rosenshine & Meister, 1994; Sweet & Snow, 2003).

*Explicit Strategy Instruction.* One approach to teaching these cognitive strategies is known as explicit strategy instruction, or as Duffy describes it, “explaining reading” and how it works (Duffy, 2002, 2003). The rationale for explicit strategy instruction is that comprehension can be improved by showing readers how to use and apply cognitive strategies across the processes of reading. The teacher “thinks aloud” as she or he applies prior knowledge or synthesizes information from across text so that students have a model for how good readers gather meaning from and interact with text (Duke & Pearson, 2002; Nokes & Dole, 2004). Because classrooms have students at varying levels in their use of cognitive strategies and the texts they encounter are at different levels of complexity and density, explicit strategy instruction can help almost all students become more proficient readers. Researchers support teaching students to use cognitive strategies and then reducing teacher support as students begin to apply and transfer the strategies into their independent reading. This is known as “the gradual release of responsibility.”

The model as described by Duke and Pearson (2002) includes the following components:

- An explicit description of the strategy and when, how, and why it should be used
- The teacher’s cognitive modeling of the strategy and perhaps student modeling of it
- Teacher and students using the strategy collaboratively
- Guided practice in which students gradually assume responsibility for using the strategy
- Independent use of the strategy by students
- The gradual release of responsibility

As readers can see, the explicit strategy instruction model of teaching includes the components of direct explanation and scaffolding. Although this model is most often used to teach comprehension strategies, it can also be used to teach other processes of literacy including word recognition, vocabulary acquisition, and writing. The moves of the model as applied in classrooms typically include an introduction to the strategy; teacher modeling of the mental processes involved; opportunities for collaborative, guided, and/or independent practice by students; and coaching and monitoring for transfer by teacher and students (Calhoun, 1998). Students



need to have many experiences (teacher modeling and student application) with a strategy to learn what it is (*declarative knowledge*), how to use it (*procedural knowledge*), and when to use it (*conditional knowledge*). (See Nokes & Dole, 2004, for a review of the research on the effectiveness of explicit strategy instruction.)

Duffy, Rohler and other researchers have noted that when planning instruction to support comprehension, it is critical to teach students the declarative, procedural and conditional knowledge associated with strategy use. Declarative knowledge allows students to name the strategy being used. Having this common language allows for conversation about the strategy with a mutual understanding between the teacher and the student as well as between students. Procedural knowledge requires students to know how to apply their knowledge. Readers with procedural knowledge have an understanding of what must be done to use a strategy. Conditional knowledge is the ability to understand when and why to use a given strategy. Having this knowledge helps students understand the conditions under which certain strategies are appropriate and effective. Conditional knowledge also leads to more flexible strategy use as it provides support in how to transfer strategies to new reading situations.

The modeling phase of explicit strategy instruction provides information about the thinking needed as one applies the strategy to text. It differs from modeling behavior or how to do a linear task. Since cognitive processes related to comprehension are not visible processes, teachers must provide verbal descriptions or mental models as they think aloud and describe the mental processes they use. This “thinking aloud” shows both proficient and struggling readers that even skilled readers are often faced with comprehension challenges (Nokes & Dole, 2004).

The explanation of the strategy and its use and the thinking-aloud or mental modeling usually occurs early in the lesson and often begins with a great deal of teacher talk. Since text interaction is an individual process and no two people think about information in the same way, Think-Alouds do not provide an exact model to be duplicated but rather one example of thinking to be used as a guide to engage more deeply with the text. Struggling readers benefit most from this mental modeling, but average and proficient readers also benefit because many of them encounter unfamiliar and difficult texts across different content areas.

During the collaborative or guided practice moves of the explicit strategy instruction model, many students need scaffolds or supports. Scaffolding includes teacher instructional actions designed to shift responsibility from teacher to students (Block, Gambrell, & Pressley, 2002). With continued teacher support and structure, students move from observers, to participants, to independent users as they take more control. Extensive



teacher support and coaching as students begin to apply a strategy generally results in greater transfer of strategy use (Nokes & Dole, 2004). Other researchers also support having students work collaboratively in pairs or small groups because social collaboration creates more learning opportunities as students share and discuss their application of strategies to content area materials (Applebee, Langer, Nystrand, & Gamoran, 2003).

(See VanDeWeghe, 2007, for a brief but comprehensive review of “What Kinds of Classroom Discussion Promote Reading Comprehension.”) In this review, VanDeWeghe builds on Nystrand’s (2006) work and describes nine approaches to discussion that lead to improvements in students’ reading comprehension achievement, including transactional strategy instruction, questioning the author, and reciprocal teaching.)

Because comprehension is an ever-changing interaction of thought processes between the reader and the text, it is important to find an instructional balance between a structure that supports the development of techniques to help students think strategically as they read and the flexibility to be responsive to student needs. Explicit strategy instruction provides teachers with a structure for explaining and demonstrating how reading works in their content area, with mental models of the thinking involved, with multiple opportunities for practice and coaching until the students reach a high level of control of the concept or strategy being taught (Calhoun, 1998). Many students in grades four through twelve struggle with recognizing and using the text structures (organizational patterns used to present information) and discourse patterns used in mathematics, science, business, art, social studies, and other course textbooks. This model gives teachers a chance to “show” students how highly literate readers in the content areas approach these texts.

### ***What Is the Role of Motivation and Engagement in Supporting Comprehension for Adolescent Learners?***

While effective comprehension instruction supports struggling readers in creating meaning with text, students will not practice these instructional strategies if they are not motivated to engage with text on their own. Motivation can be defined as the cluster of personal goals, values, and beliefs with regards to topics, processes, and outcomes of reading. Literacy engagement refers to the frequency and depth of student involvement with reading and writing (Guthrie & Wigfield, 2000). Motivation and engagement become challenging issues when supporting literacy for adolescent learners who struggle with reading. In the report *Reading Next—A Vision for Action and Research in Middle and High School Literacy*, Biancarosa & Snow (2006) establish a rationale for why these challenges exist for most adolescents:

...ensuring adequate ongoing literacy development for all students in the middle and high school years is a more challenging task than ensuring excellent reading education in the primary grades, for two reasons: first: secondary school literacy skills are more complex, more embedded in subject matters, and more multiply determined; second, adolescents are not as universally motivated to read better or as interested in school-based reading as kindergartners. (p.2)

When trying to determine the approaches to comprehension instruction that will accelerate the development of adolescent literacy, it is also important to study the factors that are likely to increase students' motivation and engagement. While these factors include high quality instruction in learning from the materials provided in the content areas, such as explicit strategy instruction, they also include the use of interesting texts written at a range of reading levels, opportunities to discuss questions that arise from reading, some choice in what is read and the questions that are explored. Discussion and social collaboration contribute to reading comprehension and learning in the content areas (Guthrie & Wigfield, 2000). These instructional approaches, especially when combined, have the capacity to support learning in the classroom as well as stimulate students' desire to learn beyond the classroom setting.

### ***How Do Electronic and Multimedia Documents Affect Reading Comprehension?***

Changing demographics and digital technologies are additional factors to be considered when working to improve students' reading comprehension and access to knowledge (Sweet & Snow, 2003). Myers defines literacy "as a set of skills that reflect the needs of the time." As needs shift, our definition of literacy also shifts (Myers, 1996). Today's students represent the first generation to grow up with 21<sup>st</sup> century technology, and it is clear these new technologies are fundamentally affecting how ideas are represented in text as well as how students think about, process, and communicate information (Prensky, 2001). Some scholars have found patterns in their data to suggest that adolescents who appear most at risk in the area of literacy are sometimes the most adept at, and interested in, understanding how digital technologies work. The idea that literacy is reinventing itself through these new technologies has enormous implications for teachers at the middle and high school level (Alvermann, 2002).

Students need many of the same skills for constructing meaning with electronic text that they need for use with traditional text. For example, many students need instruction in efficiently using text with multiple links that have varying degrees of relevance to the questions they seek to answer. Many electronic documents on the Internet are expository or informational and likely to be more difficult than the instructional level of students. As

Kim and Kamil (2003) state, “Students can benefit from explicit instruction in reading electronic and multimedia texts” (p. 173). Students may need vocabulary instruction for some sites, a review of informational text structures, as well as modeling the integration of information from traditional and electronic sources (Kim & Kamil, 2003).

### **Recommendations for Improving Reading Comprehension and Learning with Text in Grades Four through Twelve**

There is a sense of urgency in the United States regarding the literacy skills of adolescents. Learning to independently construct meaning from text requires multiple opportunities for practice with a wide variety of authentic and relevant materials. When students are able to use the same strategies as highly proficient readers, they are more likely to achieve the high levels of literacy needed to be successful in our ever changing world, whatever one’s criteria for success.

Members of the Iowa Adolescent Literacy Research and Development Team agree with the scholars and researchers cited above. They recommend that responsible parties consider how these approaches are being used in their settings:

*Explicit strategy instruction in reading comprehension, multiple opportunities to practice reading strategies across all content areas, and time for discussion and writing to support understanding and learning from texts. Along with these specific supports for reading comprehension, are students reading widely in their content areas to build vocabulary and knowledge, do they have ample opportunities to participate in teacher-facilitated discussions, and do they have ample opportunities to collaborate in inquiry-oriented projects that include writing about their learning?*

What specific actions can be recommended?

- Teachers and those who support them should examine student performance data in reading comprehension, both standardized tests results and the results of up-close measures of comprehension that form part of content area instruction. Are many students struggling with comprehending text? If the results are not what the community desires, then it’s time to take a look at curriculum and instruction.
- Curriculum and instruction: How is reading comprehension, awareness of text structures, and discourse features treated in the local curriculum documents? Are teachers aware of the strategies that proficient readers use to access their particular content area domain? How many teachers are providing explicit strategy instruction to students to assist them in accessing their content? Compare

local findings and implications to the research described above. Do changes need to be made to facilitate student learning?

- If the answer is “yes” or “maybe,” then several actions are indicated:
  - A re-examination of curriculum to focus on depth and breadth of knowledge, because deep understanding of domain specific knowledge cannot coexist with a focus on coverage alone. The *Iowa Core Curriculum* provides a good resource to schools who wish to re-examine their curriculum in this fashion.
  - Teachers will need professional development and support in understanding the importance of teaching students the domain- specific strategies necessary for accessing their content and assistance in learning to use the explicit strategy instruction model.
  - Teachers, administrators and others should develop a plan which identifies and prioritizes strategies to be explicitly taught within each content area domain. This plan will ensure:
    1. That students are provided with multiple texts that will allow for practice of the use of the strategy while learning content area concepts.
    2. That students and teachers know that strategies are a means to an end, not an end in themselves.
    3. The regular collection of data to support the gradual release of responsibility.

### Closing Remarks

The current status of adolescent literacy indicates there is little instructional time, attention, funding, or policy support devoted to teaching students how to learn as they read content area materials (Nokes & Dole, 2004). A high priority needs to be given to explicit strategy instruction in the comprehension of texts in all content areas, not just reading courses. Since adolescent learners present diverse needs in experience and language, some students will struggle with the reading process in general while more proficient readers will have difficulty transferring the strategies they have learned to a wide array of increasingly complex texts. To facilitate learning in the content areas, school and district faculties will need much support from board members, the community, AEA staff, and their local school librarians as they seek to provide students with access and use of a wide variety of reading materials in the content areas, including electronic texts.

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## **The Role of Writing in Developing Adolescent Literacy and Supporting Learning in the Content Areas**

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Writing helps students make learning their own. Through writing, students can “struggle with the details, wrestle with the facts, and rework raw information and dimly understood concepts into language that communicates” (National Commission on Writing in America’s Schools and Colleges, 2003, p. 12). In many domains—science, agriculture, mathematics, social sciences, insurance, sales and marketing, news, and media—writing remains one of the chief means of organizing and presenting ideas to the world. For students in grades four through twelve, this world may be comprised of self, teachers, family members, and friends. For persons beyond school, the audiences may include colleagues who are scientists, accountants, store managers, teachers, surgeons; or employees, supervisors, and board members; or voters, family members, and friends. Whoever the audience is and whatever the purpose, writing enables the writer to share observations, interpretations, and the results of personal and professional inquiries within the immediate setting and beyond.

In spite of the fact that writing is the second “R” in education, it has become a neglected element of adolescent education, and not because students are naturally proficient. Based on data from the *National Assessment of Educational Progress (NAEP)*, around 70–75% of U.S. students in grades four, eight, and twelve are low-achieving writers who can write at a basic level but not at a proficient or advanced level (Persky, Daane, & Jin, 2003). Yet, many scholars over the past 20 years have reminded educators that writing shapes thinking (Langer & Applebee, 1987) or more recently that “writing is an overlooked key to transforming learning in the United States” (National Commission on Writing, 2003, p. 16). All the core academic

organizations—mathematics, science, social studies, reading—have long advocated writing as a tool for learning in the content area. So, why are students where they are today in using writing as a tool for learning and in the quality of their writing?

### ***What Is Writing?***

Writing is recording ideas in a language that can be retrieved by the writer and others. It involves an audience, which may simply be the writer or the writer and the teacher; the goals or purpose for recording ideas, thoughts, emotions; application of knowledge of the language being used and how it works (letter symbols, conventional spellings, word order, usage and mechanics, ways of recording, and forms/genre of recording); and knowledge about the topic or purpose for writing or willingness to gain this knowledge, possibly with the help of the text one writes while exploring a topic (Calhoun, 2007).

This definition of writing allows us to inquire into two main goals for teaching writing: *learning to write* and *writing to learn*. Both can be taught; both have a continuum of expertise; and both are probably never fully mastered because human potential in composing and learning is infinite. When you think about the writing you did in school, if you think about English classes and scores on your essays, comments about your handwriting or spelling, and favorite or least-favorite composition topics—this fits into the learning to write goal. If you think about papers you wrote describing changes in medical care between 1900 and 1960, assignments asking you to explain how you solved a problem, or an essay asking you to explain the use of algebra in everyday life—these assignments could fit into the writing to learn goal, or they may have been assessment measures for your consumer sciences teacher or mathematics teacher.

Of course, these two goals—learning to write and writing to learn—overlap. For example, skill in organizing ideas, reading over them, and reflecting on the coherence of the message enhances our use of writing as a tool for learning. Our prior knowledge about written language and how it works supports our learning. On the other hand, the more skilled we are in using writing to support our learning, the more willing we are to take risks with how we present information. Because as learners trying to compose a message about specific subject matter, our emphasis is on our content and on using all we know about language to shape our message.

Not too many years ago, the traditional approach to writing instruction was that during the first few years of school, up through grades three or four, students were taught how to write. After that, they were to write primarily to demonstrate their knowledge of what had been taught. Reading has a similar history: during the first few years of school, students were to *learn*

to read; and beginning around grade four, they were to *read to learn*. Today, scholars in literacy, reading, and writing remind us that we are reading to learn and writing to learn from the moment we try to write *dog* and read our message about Rover to our grandmother.

A hundred years ago, composing was considered important for the college-bound, but not for the masses. Basic writing skills for copying information, recording information accurately, and accomplishing other serviceable tasks were for all students; composing and reflecting on one's ideas was for a small portion of the school population. Our goals are much higher today, and our population for high literacy includes all students.

Given the importance of writing, members of the Adolescent Literacy Research and Development Team urge teachers, principals, and other educational stakeholders in Iowa to take a look at the status of writing in grades four through twelve, within language arts classrooms and across all disciplines, and determine if changes are needed.

### ***What Role Does Writing Play in Literacy Development?***

In the last five years, adolescent literacy has received some much-deserved attention, but most reports and subsequent support for schools have been more concerned with reading than writing skills. Yet, progress in reading and writing are related. People who read extensively find writing tasks easier because of prior knowledge of text structure from their reading experiences (National Council of Teachers of English [NCTE], 2004b) and because they have more knowledge of the world and how it works (Stanovich, Cunningham, & West, 1998).

Some educators view writing “as the ‘flip side’ of reading” (Graham & Perin, 2007, p. 7). They assume that good readers are also good writers and that teaching students to become better readers will naturally lead them to becoming better writers. Graham and Perin point out, however, that while reading and writing share many processes in terms of how language works and their development is roughly parallel, they are not identical processes. For instance, students may use a general understanding of text attributes to become both successful readers and writers, but students form mental representations of the thoughts of others during reading, while writers draw from their own thoughts to create a written record (Graham & Perin, 2007; Pearson, 1994). So, while reading and writing are closely related, they have many separate task demands.

Writing is also clearly connected to speaking. According to the National Council of Teachers of English (NCTE), “writing exists in a nest of talk” (2004b, para. 33). Many writers talk as a means of rehearsing what will become their written texts, though their usual conversational tones are not always what appear in written form. The connection between writing and

speaking is further illustrated by the notion that writing has a voice. And, of course, the rapidly converging evidence around the value of discussion to facilitate learning in any content area also applies to improving writing quality and the coherence of one's message or story (Applebee, Langer, Nystrand, & Gamoran, 2003).

For a short but thorough review of how reading supports the development of writing and how writing supports the development of reading, see David Pearson's (1994) essay on "Integrated Language Arts."

### ***How Does Writing Influence the Lives of Students?***

Adolescents write for a variety of purposes, many of which are embedded in social relationships. The first, and most obvious, writing relationship is the one that grows between the writer and the reader, but other relationships surround the act of writing as well. These relationships may involve other writers, friends, community or family members, and teachers. In academic and workplace settings, writers generally write because someone has told them to write; because they need to share information with colleagues, employees, and managers; or because they are trying to think through the kinds of actions that need to be taken or issues that need to be addressed.

Though the social and academic importance of writing is clear, some educators mistakenly believe that solid writing skills are only necessary for those students who are college-bound. However, the 2004 data from the American Diploma Project and the 2005 ACT data show that "the knowledge and skills required for higher education and for employment are now considered equivalent" (as cited in Graham & Perin, 2007, p. 8). Also, the data from the National Commission on Writing (2003) indicate that "writing proficiency has now become critical in the workplace and that it directly affects hiring and promotion decisions." More and more jobs require employees to produce written documents and prepare presentations that incorporate both visuals and text. The good thing about this knowledge is that much is known about how to improve writing and how to provide high quality writing experiences in all learning arenas and for all students, not just those who are college-bound.

### **Current Student Performance in Writing**

The stakeholders who know the most about how well students are composing and whether they are using writing as a learning tool are classroom teachers and the students themselves. Other stakeholders have very little information. The following provides a brief overview of national and local data on writing and what they reveal about performance.

Standardized test scores provide stakeholders with some information. Tests such as the *Iowa Tests of Basic Skills (ITBS)* and the *Iowa Tests of Educa-*

*tional Development (ITED)* measure usage, mechanics, and vocabulary, which speak to elements of good writing. However, there is not a score which describes students' performance in writing or their competence in composing. The University of Iowa College of Education Iowa Testing Program does offer an *Iowa Writing Assessment* for grades three to twelve; however, it is not a component of statewide assessment, and many school districts do not use it.

ACT also has limited reporting on writing performance. Students who take the ACT receive a subscore for the English section of the exam that provides information on how well they can revise writing, but that does not inform students or teachers about how well students can compose. ACT has recently added a writing component to its exam, but it is still optional, so not every student taking the ACT takes the writing exam. Participation in the ACT is not required of Iowa students, so its results do not provide a full picture of writing achievement in Iowa. However, Iowa ranks third in the nation among states that have 50% or more seniors taking the tests. In the last ten years, between 64–69% of Iowa graduates have taken the ACT (Iowa Department of Education [IDE], 2006, p. 159), and it can be assumed that these students had postsecondary intentions. With these limitations in mind, what do these data sources reveal about the status of adolescent writing in the state and the nation?

ACT provides the following data from 2007: 78% of the 23,016 Iowa students who took *ACT English* met the college readiness benchmark, compared to 69% of the national population. Reaching the college readiness benchmark score indicates that students have a 50% chance of obtaining a B or higher or about a 75% chance of a C or higher in English Composition or similar courses. For English Composition, the benchmark score is 18 (scores range from 1 to 36) (ACT, 2007b).

A closer look at Iowa's ACT data reveals that English scores have remained essentially steady (between 21.3 and 21.6) since 1991. They are consistently about one point higher than those of the rest of the nation (IDE, 2006, p. 163). *ACT English* scores have a consistent, positive correlation with student-reported Grade Point Average (GPA). Students who report higher GPAs earn higher scores on the English section of the ACT.

On the *ACT Optional Writing Test*, 4,994 Iowa students in the high school graduating class of 2007 took both the English and the essay tests. These students had a mean on the English examination of 24.2 (compared to 22.3 nationally) and a mean on the essay of 7.7 (compared to 7.6 nationally).

Another data source on writing is the *National Assessment of Educational Progress (NAEP)*, also known as the *Nation's Report Card*. NAEP is the only national, ongoing assessment of what United States students know and

can do in a variety of school subjects. The most recent results on writing performance are from 2002, and they shed some light on the proficiency of students as writers.

*NAEP* measures the writing skills of fourth, eighth, and twelfth-grade students. Because the writing frameworks indicate that students should write for a variety of purposes, students are asked to write narratives (e.g., stories or personal essays), informative pieces (e.g., explanations, reviews, essays, letters), and persuasive pieces (e.g., editorials, letters to employers, arguments). The *NAEP* writing scale range is 0–300. How well a student scores places her or him into one of three achievement levels: *Basic*, meaning that this student’s work denotes only partial mastery of the fundamental knowledge and skills necessary for success at that grade level; *Proficient*, meaning this student’s work denotes “solid academic performance” at that grade level; and *Advanced*, meaning this student’s work denotes “superior performance” at that grade level. Another category, not considered an official achievement level is labeled *Below Basic* for students whose writing is far below what is needed to meet grade level demands.

Between 1998 and 2002, *NAEP* writing assessment average scores of students in grades four and eight increased slightly (from 150 to 154 for grade four, and from 150 to 153 for grade eight). Average scores for students in grade twelve declined slightly, from 150 to 148. These average scores are all at the 50<sup>th</sup> percentile of the writing scale scores. The lowest cut scores for students to be considered proficient are 176 at fourth grade, 173 at eighth grade, and 178 at twelfth grade. Gender differences remain large and significant: at grade four, females’ mean scores are 17 points higher; at grade eight, 21 points; at grade twelve, 24 points (Grigg, Dane, Jin, & Campbell, 2003).

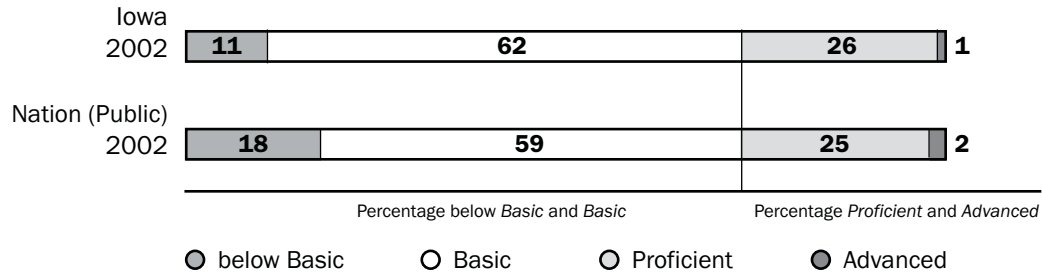
Looking specifically at *NAEP* writing results for Iowa students, only grade four data from 2002 are available. In 2002, the mean scale score for Iowa fourth grade students was 155, and for the nation, 153. See Table 12.1 and Table 12.2 for the percentage of students scoring at each achievement level and the differences in the results across demographics. The mean scale score for female students was 166, and for male students was 144—a significant 22 point difference. And, 40% of Iowa females scored *Proficient* while only 14% of males did.

In its June 2007 Policy Brief, the Alliance for Excellent Education sounded the alarm about “millions of middle and high school students lack[ing] the reading and writing skills they need to succeed in college, compete in the workforce, or even understand the daily newspaper.” The Alliance’s position is that Congress “has made relatively little investment in the literacy skills of students in grades four through twelve” in spite of the reality that it is in

these adolescent years that the “expectations and demands for student literacy increase dramatically” (p. 8).

**Table 12.1**

Student Percentage at Each Achievement Level



**Table 12.2**

Grade 4: Performance of NAEP Reporting Groups in Iowa

Reporting Groups	Percentage of students	Average Score	Percentage of students at			
			<i>Below Basic</i>	<i>Basic</i>	<i>Proficient</i>	<i>Advanced</i>
Male	52	144	17	69 ↑	14 ↓	#
Female	48	166 ↑	6 ↓	54	38 ↑	2
White	86	156 ↓	10	62	27	1 ↓
Black	6	146	22	58	18	3
Hispanic	4	139	21	66	13	#
Asian/Pacific Islander	2	---	---	---	---	---
American Indian/Alaska Native	#	---	---	---	---	---
<b>Free/reduced-priced school lunch</b>						
<i>Eligible</i>	30	142	20	66	14	#
<i>Not Eligible</i>	70	160 ↓	8	60 ↑	30	2 ↓
<i>Information not available</i>	#	---	---	---	---	---

# Percentage round to zero.

--- Reporting standards not met; sample size insufficient to permit a reliable estimate.

↑ Significantly higher than,      ↓ lower than appropriate subgroup in the nation (public).

While these data and the reports from concerned stakeholders have limited usefulness for directly supporting individual students who took any of these tests, they have major implications for the curriculum and instruction currently being provided to Iowa students. And, while no national data are



available on using writing to learn, many content area teachers acknowledge that they use writing primarily to ensure student engagement with their assignments and for assessment purposes, not as an intentional teaching strategy to help students engage in applications of declarative, procedural, or conditional knowledge and problem solving.

### **Current Status of Educational Support for Writing and Writing Instruction**

Many United States high school students cannot write well enough to meet the demands of higher education or the workplace. The following paragraphs explore reasons why.

*Literacy Instruction in the Content Areas: Getting to the Core of Middle and High School Improvement* (Heller & Greenleaf, 2007, pp. 15–16):

...evidence suggests that relatively little literacy instruction goes on in most content area courses. The vast majority of middle and high school students engage in very little sustained reading, and when they do it is mainly from brief, teacher-created handouts and to a lesser degree, from textbooks. Most secondary school teachers encourage and require very little reading of primary sources or real-world materials. Most devote little if any class time to showing students, explicitly, what it means to be a good reader or writer in the given subject area. And most students engage in very little discussion of what they have read, how to write, or how to interpret, analyze, or otherwise respond to texts (Applebee & Langer, 2006; Connors, 1997; Cuban, 1989; Hillocks, 1986; Hull & Rose, 1989; Wade & Moje, 2000).

In spite of all the factors negatively influencing adolescent writing instruction, there are some positive writing resources educators can turn to for support. One effort affecting positive change in writing instruction is the National Writing Project (NWP). Many agree that it is the most successful teacher network in the nation. Starting in 1974, NWP has offered a model that fosters teacher learning communities. The project currently boasts 165 regional learning communities that help teachers improve the way they teach writing and provide opportunities for student learning (National Commission on Writing, 2003).

At the state level, there is also support for writing. Iowa's new Core Curriculum addresses both learning to write and writing to learn goals. It identifies the essential skills and concepts students must possess before graduating from high school. Some of the essential concepts and skills for writing include: using an effective writing process; using knowledge of purpose, audience, format, and medium in developing written



communication; using writing as a tool for learning; and adhering to conventions generally established in spelling, punctuation, grammar, usage, syntax, and style (IDE, 2006, p. 29). In addition, there is advice for those teaching writing, such as: “[students] need to write frequently in a variety of forms and for a variety of purposes and audiences.”

### ***Opportunity to Write***

Opportunity to write is similar to opportunity to read: if we want students to become better writers in general and better thinkers in our content areas, we must provide them with physical and cognitive models of what good writing looks like and how to do it in our discipline. Only students, teachers, administrators, and other faculty members know what the opportunity to write and learn picture is like in their schools. A good place to start an inquiry is to simply take a look at the simple variable of time and opportunity, then move on and take a look at how much modeling (of how to write appropriate content area products) is occurring.

Nationally, many students are not writing much for any of their academic subjects, including English. Approximately two-thirds of students in grade eight spend an hour or less on writing for homework each week. Approximately two-fifths of twelfth grade students report “never” or “hardly ever” being asked to write a paper of three pages or more (Applebee & Langer, 2006).

In spite of current attention and good intentions, most school and district faculties need to do much more with curriculum and instruction to strengthen their students as writers.

### **What Does the Knowledge Base Say about Learning to Write and Writing to Learn in Grades Four through Twelve?**

Information about learning to write may not be equally useful for all content area teachers, but improving the quality of writing of students provides them with more options for skilled presentation of information in any discipline.

### ***Learning to Write***

This section will review general principles of good writing instruction; explicit strategy instruction for teaching students how to plan, compose, revise, and editing their writing; and the role of grammar and mechanics in a quality writing program.

For guidance on writing instruction, as in learning to write, readers can always look to the NCTE. According to the *NCTE Beliefs about the Teaching of Writing*, students should be writing to become better writers. Just as is true with various other endeavors, it is also true with writing that practice leads to improved performance. It is critical, however, that this practice be

in the form of “actual writing, not merely listening to lectures about writing, doing grammar drills, or discussing readings” (2004b, para. 4). Any other technique aimed at improving student writing performance must be in addition to extensive writing practice.

The NCTE also identifies *reflection* as a critical component in writing instruction. To become better writers, students need to reflect on collections of their own writing over time. This can be done through a portfolio, a journal, or a notebook of writings. This allows students to engage in an empirical study of their own writing, identifying how they have changed as writers and how they need to grow as writers. A highly effective means for achieving productive reflection can happen through individual student conferences with the teacher. How to self-assess one’s progress is a valuable skill to help students develop as writers. Teachers may find that sharing their own growth and trials as writers will increase their students’ willingness to reflect.

Teachers intent on improving student writing should be *engaged in conversations* with students. These conversations may be related to reading experiences; pointing out connections among structure, craft, genre, and audience. Similarly, these conversations may center around reflection on a student’s writing collection, identifying ways the student’s writing has changed, or needs to change, in regards to conventions. Writing conferences that include teacher suggestions are useful in improving student writing (NCTE, 2004b).

Additionally, teachers must support the needs of student writers outside of the school context. Today’s students are engaged in many self-sponsored writing tasks: they email, text message, blog, instant message, and more. When teachers can *connect to the writing that occurs naturally in students’ lives*, they can accelerate writing growth (NCTE, 2004b). Teachers who can connect to these authentic purposes for writing have more avenues for improving adolescent writing. Unfortunately, Graham and Perin found that in spite of the varied demands of real-life writing, school-based writing has traditionally placed a disproportionate emphasis on certain formats, such as the five-paragraph or keyhole essay. To produce skilled writers, schools must focus on the instruction and practice of “a variety of forms, strategies, knowledge, and skills...[students] can apply flexibly to achieve their writing goals” (Graham & Perin, 2007, p. 22).

Students need to be able to write to a variety of audiences and for a variety of purposes—choosing their methods of presentation from a range of genre and formats. This *flexibility in writing craft* is quickly becoming a more prominent goal of writing instruction. Good writers write with purpose and audience in mind, and they adjust their presentation of information accordingly. A truly proficient writer has a depth of understanding and skill

with writing that allows him or her to adapt writing format and purpose to fit the needs of many different contexts (Graham & Perin, 2007, p. 22).

However, the curricular and instructional components that contribute to high quality writing have been often valued unevenly in school curricula. For instance, “some teachers may overemphasize correct grammar or spelling at the expense of the expression of ideas” (Graham & Perin, 2007, p. 22). The best writing instruction values forms and conventions as well as style, tone, context, and purpose. To become strong writers, students must have practice in a variety of genres, not only narrative writing. Curricular work should be centered around “specific product goals, which assigns students specific, reachable goals for the writing they are to complete” (Graham & Perin, 2007, p. 4). These specific goals may include adding more ideas to the paper, adhering to a specific genre when writing a paper, or adhering to a certain goal for writing.

*Extended writing* creates the ground for extended learning. Such writing allows for a wider choice of approaches and requires a more thorough coordination of information from the source text, presentation, or discussion. Bangert-Drowns, Hurley, and Wilkinson (2004) clarify that extended writing does not necessarily mean longer in terms of time or length. What is more important is that class time be spent on frequent writing opportunities, two to three times a week, over an extended period of time. Writing to learn within the content area with prompts that require students to think about what they know, and how and when to apply this knowledge, have greater effect sizes than personal writing.

Troia (2006) also addresses time for writing and the provision of structures to enable students with learning disabilities to become more skilled writers: “Simply asking students with learning disabilities to write more or providing them with text frames to help them organize the retrieval of content does increase the length, organization, and quality of their papers” (p. 326). Graham (1990) says that students with learning disabilities spend so much cognitive energy on grammar and spelling that it “hobbles” their ability to engage in higher order composing behaviors, such as planning and revising. When these students were asked what constitutes good writing, they stressed form over content more often than their peers who wrote well (as cited in Troia, p. 327).

While perhaps not as complex as some of the other attributes of a high quality writing instruction, there is one belief that is fundamental—the notion that *writing is a process*. Too often people think of polished, finished texts when they think of writing. It is as important, perhaps more important, to think about what writers do. Writers develop, over years of practice, a collection of skills, routines, strategies, and practices for generating, revising, and editing different texts. They draw from this knowledge bank

techniques for getting started; for what to do when they get stuck with a piece of writing; and for how to go about forming sentences, paragraphs, and complex thoughts (NCTE, 2004b).

And, writing is a process; it can never be reduced to a formulaic set of steps. Skilled writers move seamlessly and recursively between different operations involved in writing, according to the nature of the tasks and circumstances they encounter. The skills and strategies they use are refined and developed as they grow as writers—a lifelong process. Without these fundamental understandings about the nature of writing, it is difficult to teach writing effectively.

Iowa educators looking for support to improve the nature and instruction of adolescent writing should consider a worthwhile state resource, the Iowa Writing Project (IWP). Iowa's iteration of the National Writing Project was founded in 1977 to offer professional growth opportunities for teachers across the state. The organization also advocates for high quality writing instruction, as well as the use of writing as a tool for learning. Iowa teachers can access the IWP support network by enrolling in a three week summer institute that follows a structure similar to that of the NWP institutes (Iowa Writing Project, 2007).

Another essential element of an effective writing curriculum is providing students with opportunities to engage in *the study of models*. Teachers should “provide students with opportunities to read, analyze, and emulate models of good writing” (Graham & Perin, 2007, pp. 5, 20). In the study of models, students are presented with several high quality examples of the type of writing they will attempt on their own. They have opportunities to analyze the examples for critical elements, patterns, and forms. Though the effect size was small for this type of instruction, it was still statistically significant.

*Extensive and varied reading experiences* both in and out of school support the development of writing craft and a more solid knowledge base for writing content. A solid strategy is to teach students how to choose engaging books to read and then provide them with time in school to read. In addition to reading a wide variety of materials, students should access and read published writing for a variety of purposes. This immersion in genres facilitates the development of a sense of why writers make particular choices depending on their purposes and audiences. Students' knowledge of rhetorical possibilities is also enhanced through reading (NCTE, 2004b).

A good writing curriculum should include time for “collaborative writing, which uses instructional arrangements in which adolescents work together to plan, draft, revise, and edit their compositions” (Graham & Perin, 2007, p. 4). One researched method of collaborative writing comes from Yarrow

and Topping. Their model pairs a higher achieving student and a lower achieving student in a tutor-tutee relationship. While the pair works on a writing task, the teacher monitors, prompts, praises, and addresses concerns (as cited in Graham & Perin, 2007, p. 16). When students work collaboratively to help each other with their writing, the effect is a clear, positive impact on writing quality.

The NCTE (2004b) also supports this position, saying that students must write in collaborative situations, as the majority of real-world writing takes place in collaborative situations. Writers must also be able to talk about what they are trying to say with others to rehearse the language of their texts and to receive feedback on their ideas from trusted peers. Once students have a draft, it is often beneficial for them to discuss what they have done with their peers—both to solicit ideas from other student writers and to process their own thinking.

### **Explicit Strategy Instruction**

Some students struggle with writing assignments, and often students with learning disabilities find writing a very difficult task. Strategy instruction helps students accomplish a writing task. Not all writers need such instruction, however, so caution must prevail when using explicit strategy instruction. The learner's needs and the specific writing task determine the type of instruction provided.

According to the authors of *Writing Next* (Graham & Perin, 2007), explicit instruction of writing strategies had the largest effect size (0.83) of any of the instructional methods studied, showing the greatest effects with low-achieving writers. The studies included in this synthesis involved teaching students strategies for planning (including prewriting), revising, and editing their composition. These strategies range from simple brainstorming activities to more complex collaboration activities. Troia (2006) highlights several individual instructional strategies that can be combined or modified to meet particular students' needs. These include: brainstorming, generating and organizing content, using text structure organization, revising with the use of peer feedback, and revising for both substance and mechanics. Struggling writers in particular tend to bypass the planning and prewriting stages of composing, so teachers may need to model for students how to use structures to initiate and organize their writing.

Another set of strategies teach self-regulation of writing tasks. Self-monitoring and goal setting are some of the self-regulating strategies that are effective when working with learners who have a difficult time staying focused. Self-regulated strategy development (SRSD) can be applied broadly to a variety of genres (Graham & Harris, 2005). In addition to SRSD, there are strategies that help with paragraph writing, brainstorming and organizing, peer revising, and summarizing, as well as genre specific

strategies. These include story writing, persuasive writing, explanation writing, comparison writing, and report writing (Graham & Harris, 2005). The goal of writing strategy instruction is for students to be able to use any of the strategies independently.

Whether the teacher is going to work with a whole classroom, a small group, or with an individual student, she will need to base her decisions about which strategy to teach using the current writing products of students as data sources. Ongoing data collection and analysis drive the decisions about which strategies to teach during writing instruction. As teachers observe students while they are writing, talk with them, and analyze their writing samples and test scores, they can select the most appropriate interventions for their students' needs (Graham & Perin, 2007).

### **Grammar Instruction**

Along with considering what research indicates does work to improve writing quality, it is also worthwhile to note what does not work, particularly since one instructional strategy is so commonly used to promote writing growth. Schools across the state rely on or even mandate the instruction of grammar, meaning "the explicit and systematic teaching of the parts of speech and structure of sentences" (Graham & Perin, 2007, p. 21). Research on the effect size of this type of instruction showed its effect to be statistically significant. What is surprising is that the effect on quality of writing is negative, in comparison with the other strategies addressed here (Graham & Perin, 2007; Hillocks, 1987, 1986).

In the studies included in Hillocks' (1986, 1987) synthesis of the research on writing instruction and its effects, students were taught the parts of speech, components of sentences, and different kinds of clauses and sentences. He found that many teachers assume that grammar knowledge is an essential element in producing clear and effective writing, in spite of arguments from linguists that traditional grammar does not adequately characterize language. Based on his meta-analysis, Hillocks firmly states, "the study of grammar does not contribute to growth in the quality of student writing" (1987, p. 77). If understanding of grammar is used at all during the composing process, it is used at the proofreading and editing levels, not when defining purpose, process, content, or style.

Those who still hold enthusiasm for traditional grammar instruction should look to more effective strategies, such as sentence combining, which appears to build procedural knowledge. Instead of using grammar exercises, focus on the function and practical application of grammar within the context of writing, this may produce strong and positive effects on students' writing (as cited in Graham & Perin, 2007, p. 21). While grammar taught in context can play a positive role in writing development, teachers "can no



longer accept the teaching of grammar as being in any way conducive to improving the quality of writing” (Hillocks, 1987, p. 81).

### **A Cautionary Note about the Writing Process Approach and the Five Paragraph Essay**

Applebee's (1986) essay, *Problems in Process Approaches: Toward a Reconceptualization of Process Approaches* cautions educators about how easily “process-oriented instruction degenerates into an inappropriate and lockstep formula” (p. 102). Writing well requires the use of many, many different processes. And task demands may consume two or three minutes to several years, depending on the breadth and depth of the production.

Hillocks' (1995; 2005) essay, *The Focus on Form vs. Content in Teaching Writing*, reminds educators strongly that good writers “decide to write about specific subject matter,” not about a topic sentence, an expository paragraph, or a five paragraph essay (pp. 238–239). A formulaic approach to teaching writing has been dominant in many U.S. schools for over a hundred years. While the five-paragraph essay and impersonal writing style, considered “objective and scholarly” by some, provide struggling writers with a structure and voice for organizing and presenting their ideas, they also lead many students to think of writing as formulaic, not thoughtful, and as a rote task, not as a learning or inquiry process (Alliance for Excellent Education, 2007).

The current knowledge base about how to improve the quality of student writing offers many possibilities for school and district faculties to explore.

The following paragraphs cover writing-to-learn techniques and strategies that every content area teacher can use.

### **Writing to Learn**

Writing has been shown to be an effective instructional tool for enhancing student understanding of content area materials across all content areas and all grade levels. Though the long-term effect of any one writing-to-learn activity is small, the results are so positive and so consistent that it is reasonable to expect an enhancement of learning as a result of the activity (Graham & Perin, 2007).

Bangert-Drowns et al. (2004) make it clear that writing to learn activities should align with the types of writing students will most likely encounter in the content areas. Writing in the content areas in order to engage more deeply with concepts and the synthesis of concepts builds content area knowledge and improves writing quality. Studies conducted by Langer and Applebee (1987) indicate “there is clear evidence that activities involving writing (any of the many sorts of writing we studied) lead to better learning

than activities involving reading and studying only. Writing assists learning” (p. 135).

In working with the teachers, we learn that subject area writing can be used productively in three primary ways: to gain relevant knowledge and experience in preparing for new activities, to review and consolidate what is known or has been learned, and to reformulate and extend ideas and experiences. (Bangert-Drowns et al., 2004, p. 136)

Shanahan (2004) supports an extended view of writing to learn. He notes that writing is a particularly valuable way of encouraging deep thinking and is likely to be even more powerful when used in combination with other ways of thinking—including reading, listening, speaking, and viewing. Think about the depth of engagement that occurs when students write in the context of reading, interacting with peers, hearing presentations, trying to apply the information in a lab, viewing a videotape, comparing two articles, and so on.

Writing as a means to greater understanding, or writing to learn, is supported by a diverse body of research. Beginning with research by Taylor and Beach and by Steenwyck and Bean in 1984, continuing with Mason’s research in 2001, and Monopli’s studies in 2002, the evidence is clear that writing not only leads to improved recall of factual information, but that it also increases the quality of a student’s learning. Without more recent research, this notion seems to be accepted as fact (as cited in Shanahan, 2004).

According to many scholars, using writing as a way of coming to know involves getting students to think about and explain what they are learning, how they learn, and the processes involved. Several studies suggest that writing improves recall and increases the students’ understanding of material read. For example, the writing of summaries or précis lead to better recall and understanding of content information. In addition, writing makes some study procedures more effective. (See Shanahan, 2004, for a more complete review of the use of writing to support learning in the content areas.)

Langer and Applebee’s (1987) multi-year study found that writing activities involve specific thinking skills and that these activities led to more subject matter learning. Of course, content area teachers are the experts on the types of writing appropriate for their disciplines. For example, science teachers know best how to teach their students to produce high quality lab reports. Social studies teachers know how historians approach information and the kinds of parameters they establish in order to write accurate historical essays. And English teachers know how to model high quality literary analyses for their students. In addition to using particular forms of



writing appropriate to their content area, when teachers ask students to engage in writing to learn activities on a frequent basis, they are providing students with additional opportunities to recall, clarify, and question what they know.

A writing to learn perspective can change school and district curriculum. For instance, thinking of Shanahan's idea that writing should be viewed as a tool for learning instead of a tool for communication sheds some light on current writing instruction. Since so many educators see writing's utility in communication, schools across the nation spend tremendous educational resources in an attempt to make sure students can communicate clearly through their writing. This means that curricula often focus heavily on how students write, how they handle the conventional aspects of writing, and the communication functions of writing. With this model, a content area teacher would hesitate to require writing until he or she is sufficiently satisfied that the language arts or English teachers have prepared students to handle the spelling, grammar, and punctuation of the writing task (Shanahan, 2004). However, in an effective secondary curriculum in which writing to learn is embedded, all teachers would be responsible for the teaching of writing as it relates to his or her context, with the focus being placed on how students could learn most effectively through writing.

Writing to learn rejects the common idea that the sole purpose for writing is communication. Writing can help students discover new information, make connections among ideas, and deepen existing knowledge. A writing to learn perspective equates writing with thinking.

### **Summarization**

According to the authors of *Writing Next*, summarization had the highest effect size after explicit strategy instruction (0.82 compared to 0.83 for strategy instruction), making it an essential component of a solid writing curriculum (Graham & Perin, 2007). The approaches for teaching summarization can range from key word approaches to explicit strategy instruction on how to summarize (Duffy, 2003). While Graham and Perin were focusing especially on improving writing quality, summarization is a highly useful skill across all content areas and also supports reading comprehension. (See Wormeli, 2005, for a range of summarization techniques.)

### **Inquiry**

A well-planned curriculum includes inquiry. Good inquiry activities include a clearly specified goal, analysis of concrete data, specific strategies for data analysis, and application of the learning. Cumulative research suggests that inquiry is an effective instructional practice when the goal is to improve student writing (Graham & Perin, 2007) and improve content knowledge

(Hillocks, 1986; Smith & Wilhelm, 2002). Hillocks (1995) argues that writing is a form of inquiry, and a writing curriculum that incorporates inquiry strategies has a powerful impact on student performance.

Wilhelm and Smith (2007) define inquiry as “the exploration of a question or issue that drives debate in disciplines and the world” (p. 233). They advocate for the importance of personal connection and social significance for student writers. An added bonus of this type of inquiry-based instruction is that it allows teachers to work on many concepts within one unit. Schmoker, who has worked with school improvement and writing quality, indicates that teachers can build courses around good questions. He points out that an essential element of inquiry-based units is a structured way for students to respond through high quality writing. New Hampshire’s Department of Education expands on this notion, defining the teacher as a facilitator in this type of learning: “As facilitators, teachers challenge, question, and stimulate students in their thinking...” (Schmoker, 2007, p. 12)

John C. Bean (as cited in Nagin, 2006) recommends ten strategies for teaching inquiry using writing:

- Think of tasks that would let students link concepts in your course to their personal experience or prior knowledge.
- Ask students to teach difficult concepts in your course to a new learner.
- Think of controversial theses in your field.
- Think of problems, puzzles, or questions you could ask students to address.
- Give students raw data and ask them to write an argument or analysis based on the data.
- Think of opening “frame” sentences for the start of a paragraph or short essay; students have to complete the paragraph by fleshing out the frame with generalizations and supporting detail.
- Have students role-play unfamiliar points of view or what-if situations.
- Select important articles in your field, and ask students to write a dialogue between characters with different points of view.
- Think of a controversy in your field, and ask students to write a dialogue between characters with different points of view.
- Develop cases by writing scenarios that place students in realistic situations relevant to your discipline, where they must reach a decision to resolve a conflict.

These strategies can easily be applied in any content area and at any grade level.

Hillocks (1987) cautions that inquiry approaches should not be confused with “discovery teaching in which students are presented with problems or tasks and set free to pursue them” (pp. 79–80). Rather, instructional inquiry uses data in a way that is structured to teach student strategies for using data. Students might be engaged in anything from recording and describing to hypothesizing. To use inquiry appropriately, teachers present the students with data in one of many different forms or have students gather the data, articulate a task to be completed through use of the data, and provide direction and guidance as students complete the task (Hillocks, 1987, pp. 79–80).

Troyka (cited in Hillocks, 1987) provides another example of inquiry-based instruction. Students learned how to make and support generalizations to support an argument, while also learning how to recognize and refute viewpoints in opposition to their own. Students were provided with sets of information related to a problem. The problem might be something of social or community significance. Students then become participants pursuing the solution to the problem, often representing the many different sides of an issue. Through this process, they create presentations and deliver them to groups they know hold positions other than their own, causing them to develop and support their generalizations from the data and recognize and confront the opposition.

Once the students have participated in discussions, they create more formal written arguments in support of their positions. The students in Troyka’s study made significant gains (effect size of 1.69) when compared to a control group participating in a traditional instructional setting (Hillocks, 1986). This type of instruction has the potential to strengthen many different facets of writing and content area learning.

### **Recommendations for Deliberation and Action on the Role of Writing in Developing Adolescent Literacy and Supporting Learning in the Content Areas**

Members of the Iowa Adolescent Literacy Research and Development Team agree with many of the scholars and researchers cited above and have consolidated the implications of their work into the following statement:

*Many school and district faculties need to identify the strategies being used to teach students in grades four through twelve how to write and how to learn from writing. Then compare their current curriculum and instruction to the promising approaches described above. Where they find considerable discrepancies, changes in curriculum and instruction need to be made.*

Think about the learning opportunities in these two math classes:

*You are a tenth grade student, sitting in math class. Your teacher is in the front of the room, asking the students to take notes on the lecture where she presents vocabulary, definitions, and examples. She then asks if there are any questions. You proceed to do a sample exercise. The teacher tells you there will be a quiz tomorrow over the definitions.*

Your writing consists of taking notes and doing examples. Writing isn't being used to learn, just to jot lecture notes and to complete a math exercise.

Now, ponder the next scenario:

*You are in another math class. Your teacher writes the formula  $y = mx + b$  on the white board. She plots a point telling students that the coordinates of this point would be (4, 7), then she asks students to generate some of the rules or relationships that would generate that pair of coordinates. As the teacher listens to the responses, she often asks students to extend their two or three word responses to the reasoning behind the response. Then she draws a line through the points (4, 7) and (0, 1) and reviews slope as the rate of change and the relationships between input and output. After more discussion and examples, the teacher gives students a copy of her water bill and asks them to work in pairs as they apply today's algebra concepts to understanding the water bill. Their product should be a succinct written explanation that their parents can understand. (Modified from a vignette in Chapter 6, Sturtevant et al., 2006)*

In which classroom will students be more likely to understand and retain concepts for use in their daily lives? In which classroom are students more likely to be engaged cognitively with the application of concepts? In which classroom are students more likely to consider the audience for their work and why it's useful content?

As you think about what students and teachers could be experiencing, what actions can we recommend based on the available research and information:

- Teachers and those who support them should examine how writing is developed and used in grades four through twelve. What instructional activities or programs are being used? What is known about the effectiveness of these activities or programs on the development of writing and learning in the content areas? How are students actively and consciously involved in building knowledge in the content areas through writing? How well does existing instruction in every classroom match what the scholars above recommend?

As faculties compare their local data to the findings and implications of the research described above, they ask, “Do changes need to be made to help strengthen our learning to write approaches and our writing to learn approaches and the integration of the two?”

- If the answer is “yes” or “maybe,” then several actions are indicated:
  - a. A re-examination of curriculum to determine how and where writing quality is addressed; and a re-examination of the curriculum to determine how writing to learn is used across all content areas.
  - b. Language arts and English teachers may need professional development and support in expanding their range of instructional strategies to use more of those identified for significantly improving writing quality in the Hillocks’ (1986; 1987) and Graham and Perin (2007) meta-analyses. And they may need organizational and collegial support in utilizing more metacognitive instructional strategies, such as explicit strategy instruction; more personal modeling of what good writers do when they engage with different writing tasks; more time for students to discuss and develop ideas and assess their progress as writers; and more opportunities for students to write across genre and for multiple audiences. Interdisciplinary units have potential for integrating promising instructional practices across a variety of content areas.
  - c. All content area teachers may need professional development and support in expanding the use of questioning techniques and discussion strategies; developing a range of writing prompts that lead students to engage in applying declarative, procedural, and conditional knowledge; providing more modeling of how skilled persons present information in their content area and how they build and share knowledge in their content area. Inquiry approaches and explicit strategy instruction in content area assignments have great potential for facilitating student learning and depth of understanding.

Professional development must be carefully designed so that teachers and administrators are supported in making any needed changes. Professional development facilitators may want to look to the National Writing Project (NWP) model for guidelines in developing professional development communities. Here are some of the key attributes and practice of NWP professional development:

- Treating every colleague as a potentially valuable contributor
- Teaching other teachers
- Sharing, discussing, and critiquing in public forums
- Turning ownership for learning over to the learners
- Situating learning in practice and relationships
- Providing multiple entry points into the learning communities
- Reflecting on teaching by reflecting on learning
- Sharing leadership
- Adopting a stance of inquiry

The goal of these practices is to make professional development a more meaningful and effective learning opportunity for all teachers, whether the content is language arts, science, technology, agriculture, music, or social studies.

### **Closing Remarks**

The goal of these recommendations is to produce high school graduates capable of meeting the writing demands of the workforce, life, and post-secondary education and who are better able to observe, judge, reflect and think. While educators cannot expect research to point out an ideal curriculum for writing in every setting, a thorough review of the knowledge base does identify some approaches that should be more highly valued than others.

Not all literacy skills can be easily transferred from one discipline to another, and becoming competent in more than one content area requires more than applying generic skills and strategies in new situations. Students must be taught skills, knowledge, and reasoning processes specific to certain disciplines. To accomplish this requires a schoolwide effort. Schools and teachers must be supported as they begin to learn and implement new, effective strategies for teaching writing. They need guidance and support as they review and change their current curricula and implement new ideas.

Every teacher and administrator has to participate and be supported in his or her efforts. Beyond that, institutions of higher education that train teachers must review their processes for teaching writing and incorporating writing into content areas and make necessary changes to improve the future of instruction.

Think about the learning to write and writing to learn goals in your setting. According to Heller and Greenleaf (2007), “To enter any academic discipline is to become comfortable with its ways of looking at and communicating about the world” (pp. 7–8). Our immediate academic goals include forming students who have a range of ready techniques for presenting their ideas and who are familiar with the power of writing to learn in every content area.

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## **Struggling Readers and Writers**

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There is clear evidence that many middle and high school students are not achieving at the level that is needed to be successful in a society with ever-increasing literacy demands. Some put this number at around 65%. Many of these students are from lower socioeconomic circumstances, are people of color, and/or are simply not engaging with the curriculum content.

In each literacy strand, curriculum and instructional approaches for struggling readers and writers have been addressed. This inclusion was intentional. These students are members of almost every classroom. The following paragraphs provide a brief description of this population, identify curriculum and instructional approaches that have promise for accelerating literacy development, and provide a list of especially useful resources for responsible parties working to improve performance of struggling readers and writers.

Balfanz, McPartland, and Shaw (2002) identify three levels of struggling readers who enter ninth grade:

1. Between five and ten percent of struggling readers need massive amounts of extra help because their reading levels range from nonreader through grade three. Many of these students lack fluency, have limited reading vocabularies, and employ limited comprehension strategies. These students need a structured intervention program from special education or a strong reading intervention program, such as Second Chance, that employs many characteristics of what is currently known about improving reading performance.

2. A larger group of struggling readers enters ninth grade reading at a fifth or sixth grade level. These students will have difficulty learning from some of their content area texts. Teachers of these students may need to provide more background knowledge prior to assignments; provide instruction that systematically builds vocabulary in their content area; provide opportunities for paired reading, assisted reading, and reading theatre; provide opportunities for discussions among students about their reading; and provide a range of content area materials written at a range of reading levels for students to use as learning resources.
3. The third group of struggling readers can read and comprehend, but they lack the literacy skills to learn independently from reading conceptually dense high school textbooks. Content area teachers will need to support these students in simultaneously learning their content and becoming more proficient as readers, writers, listeners, speakers, and thinkers by explaining how they, the teachers, read, write, and think about their discipline.

There is converging evidence that 90% of struggling readers and writers can be helped significantly and that what works for proficient readers also works for struggling readers (Gersten, Fuchs, Williams, & Baker, 2001; Graham & Perin, 2007; Ivey & Broadbush, 2007; Sturmski, 1997; Torgesen et al., 2007; Troia, 2006). These students need

- opportunities to read books at a range of reading levels and interests, as well as many trade books that teach content area concepts, and they need access to and instruction in using electronic print resources;
- many opportunities to write and to have explicit strategy instruction in writing;
- explicit strategy instruction in vocabulary building within the content areas;
- opportunities to discuss what they are reading and writing; and
- instruction in reading comprehension strategies within the content areas, especially explicit strategy instruction and metacognitive strategies that help them learn from and apply the content.

Torgesen et al., (2007) state that

...with the exception of instruction to increase reading accuracy and fluency, the content of effective literacy instruction for students reading below grade level is very similar to that recommended for students reading at grade level and above. As with students reading at grade level, general recommendations include instruction to help students apply reading comprehension strategies more effectively before, during, and after reading; instruction to increase the breadth

and depth of vocabulary knowledge; instruction and assignments that are motivating and engaging; and instruction that improves knowledge of content-area concepts and facts. (p. 89)

Irvin, Buehl, and Radcliffe (2007), citing the work of Balfanz et al. (2002) state:

The implication of this research is that by having all content teachers take responsibility for helping students to become more literate in their content areas, 90% of struggling readers can be helped significantly. What is necessary, however, is a total school commitment to literacy improvement. (p. 66)

### **Special Populations: Special Education Students and English Language Learners**

About 15–20% of students struggle the most with the academic curriculum, and these students are special education and English language learners (ELL). In Iowa, approximately 13%, or 64,350 for the 2005-2006 school year, of the student population is enrolled in special education (stable at around 13% for the past five years). Approximately 3%, or 17,000, of the total student population is considered limited English proficient (LEP) (Iowa Department of Education [IDE], 2006).

Iowa Code 256B.2 defines those requiring special education as “persons under twenty-one years of age, including children under five years of age, who have a disability in obtaining an education because of a head injury; autism; behavioral disorder; or physical, mental, communication, or learning disability; as defined by the rules of the Iowa Department of Education” (IDE, 2006, p. 35). And LEP students are defined as those whose “language background is in a language other than English, and the student’s proficiency in English is such that the probability of the student’s academic success in an English-only classroom is below that of an academically successful peer with an English language background” (IDE, 2006, p. 33).

Members of Iowa’s Adolescent Literacy Research and Development Team believe that what has been recommended in the preceding sections of this report could accelerate the literacy development of somewhere between 90–97% of all students. This figure includes about 12% of the 16% of special education (SPED) and English language learners (ELL) identified. This statement does not imply that those designated students do not need SPED and ELL support, simply that the curriculum content and materials and instructional strategies recommended for most of the student population in grades four through twelve would also work in accelerating the literacy development of these students.

Eight highly recommended resources for responsible parties working to improve the effectiveness of their interventions with special education students and English language learners are listed below:

- Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S. et al. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction*. Portsmouth, NH: RMC Corporation, Center on Instruction. (See, especially, "Section 2: Using Interventions with Students Reading Below Grade Level," pp. 67–99.)
- Troia, G. A. (2006). Writing instruction for students with learning disabilities. In C. A. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 324–336). New York: Guilford.
- Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: A review of the research. *Review of Educational Research*, 71(2), 279–320.
- Irvin, J. L., Meltzer, J., & Dukes, M. (2007). *Taking action on adolescent literacy: An implementation guide for school leaders*. Alexandria, VA: ASCD. (See, especially, Chapter 3, "Integrating Literacy and Learning: Interventions for Struggling Readers and Writers," pp. 75–96.)
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## **Accelerating Adolescent Literacy: Addressing More Than One Strand and Content Area at a Time**

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Literacy development is facilitated by the integration of literacy strands or components and by quality instruction in how to read and write in the content areas. Learning to be proficient readers and writers requires students to use language in many ways; this multimodal approach also supports learning in the content areas.

For example, research on discussion and its value as a tool for learning provides evidence of how discussion can be used to improve the quality of students' writing performance, its use in improving vocabulary, or its use in supporting reading comprehension. Research on vocabulary development and how to help students build large sight vocabularies shows evidence about the need for wide (extensive) reading, and the use of writing to help students internalize the new or unfamiliar vocabulary until it drops into their long-term memory. The research on fluency supplies evidence about the need to work on vocabulary and wide reading. Research on improving student writing supports the need for discussion, wide reading, work on vocabulary, and using information and literacy devices students learn from participating in metacognitive reading comprehension lessons.

Reading the research in literacy and learning identifies certain strategies, mentioned frequently, for multiple purposes: *explicit strategy instruction* for word analysis and vocabulary development, for reading comprehension, for evaluation and use of electronic texts, for improving writing quality, and even for fluency exercises. *Writing to learn and inquiry* is mentioned for learning content area concepts and how the discourse of the discipline works. *Read-Alouds* are mentioned for building vocabulary, for supporting



student engagement with text, for supporting reading comprehension, and for building background knowledge in the content area. And, *wide reading* is mentioned for building vocabulary, fluency, reading comprehension, knowledge of the world and of how language works, and even for cognitive development.

Scholars today, both those who focus on all students and those who focus on struggling readers and writers, recommend that all content area teachers be supported in providing literacy instruction within their discipline. They further recommend that such efforts be schoolwide in nature, not just allocated to members of the language arts and English departments, reading intervention teachers, and special education personnel.

Most school faculties cannot address all literacy strands at once or become highly skilled in using all the most promising strategies. There is not time or support for that much work; it would overload the social and technical system. School leadership teams have to study their student performance data and their current curriculum and instructional environment and select priority areas, such as vocabulary, writing, or reading comprehension. Only local data can help determine the focus. Then, the external knowledge base becomes a rich source of possible actions.

To use the knowledge base effectively requires more than accumulating information; it requires study and application of promising approaches. Most of the ideas mentioned above would change the curriculum and instruction in many grade four through twelve classrooms in Iowa. Such changes, if undertaken, would need to be supported by high quality instruction (professional development) for teachers, other school faculty members, administrators, and central office staff.

Members of Iowa's Adolescent Literacy Research and Development Team have attempted to make recommendations at the end of each literacy strand that any interested school faculty could use in studying and improving adolescent literacy. Team members are working on a professional development series to support such work. However, promising strategies must be *implemented with fidelity* to have the expected student performance outcomes. This fidelity often requires sustained staff development, the study of implementation, and the continuous study of student effects. District and school leadership teams need to include these actions in their school improvement plans.

For those responsible parties interested in schoolwide literacy instruction in the content areas, here are several especially useful documents:

Fisher, D., Frey, N., & Williams, D. (2004). Five years later: The outcome of a school wide approach to increasing achievement in an urban school. In D. S. Strickland & D. E. Alvermann (Eds.), *Bridging the literacy gap grades 4–12* (pp. 147–163). New York: Teachers College Press.

Heller, R., & Greenleaf, C. L. (2007, June). *Literacy instruction in the content areas: Getting to the core of middle and high school improvement*. Washington, DC: Alliance for Excellent Education.

Irwin, J. L., Meltzer, J., & Duke, M. (2007). *Taking action on adolescent literacy: An implementation guide for school leaders*. Alexandria, VA: Association for Supervision and Curriculum Development.

Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S. et al. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction*. Portsmouth, NH: RMC Research Corporation, Center on Instruction. Available online at [www.centeroninstruction.org](http://www.centeroninstruction.org)

## Part Two

### ***Organizational Supports Needed for Accelerating Literacy***

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“Every organization has certain core processes that define its work. In schools, these core processes consist of decisions about what is taught and to whom, how students are grouped for purposes of instruction, how content is allocated, how teachers relate to each other in their work with students, and how student learning is judged by students, teachers and external authorities... Furthermore, changing the core processes of schools requires an explicit theory of how teachers learn to teach and a translation of that theory into constructive actions in school systems and schools.” (Elmore, 2007, pp. 195–196)

The Adolescent Literacy Research and Development Team (ALRDT) selected four critical organization components to address in supporting adolescent literacy: leadership, professional development, capacity building, and sustainability.

#### **Leadership**

The first organizational factor, leadership, encompasses many facets—such as whether the school has a clear mission statement and written goals, the overall climate of the building, the attitudes of the teachers, the classroom practices of the teachers, and the organization and quality of curriculum and instruction (Marzano, Waters, & McNulty, 2005). In *Reaching Capacity: A Blueprint for the State Role in Improving Low Performing Schools and Districts in Massachusetts* (Reville, Coggins, Candon, McDermott, Churchill, & Long, 2005), the quality of leadership provided was identified as a major weakness that led to failing schools and districts, while Elmore’s research (2002) points out that the school improvement process hinges on strong instructionally-focused leadership.

Lezotte has reminded educators for years that skilled and effective leaders understand the importance of the school's vision, mission, and core values; use data to make decisions; provide guidance in the development, implementation, and monitoring of school improvement plans; and work on developing commitments from stakeholders to perform the tasks necessary for accomplishing their collective goals. Leadership that yields schoolwide improvement focuses on all students, is responsive, and is distributed among various stakeholders (Elmore, 2002; Fullan, 2002; Lambert, 2002).

Distributed leadership is challenging because it requires that responsibility and authority for direction be shared by teachers and principals as they make decisions about what to learn (Elmore, 2004). It requires school and district leaders who build coalitions and whose communications deepen shared ownership and commitment (Fullan, Bertani, & Quinn, 2004).

Principals, as gatekeepers of the school culture, can maintain a focus on teaching and learning by working collaboratively to develop goals and school improvement plans and by assisting with data collection and analysis (Marzano et al., 2005). To facilitate the implementation of new practices, whether in data use or instruction, principals can model learning and engage in whatever professional development is being provided to the staff. The principal/leader can give the faculty permission to focus on one major initiative at a time and bring resources to bear, enabling teachers to spend their time on the selected instructional changes (Calhoun, 2002).

Sometimes, secondary school leadership is so diffused that faculties lack a common direction. Someone, usually an administrator, will have to guide the institution toward improvements in instruction and student performance. Since principals at the secondary level usually have very little experience in the teaching of reading or writing, who they recruit and how they form leadership teams is critical. For the active participation of teachers in the study of data and the setting of goals facilitates collaborative work and helps support the implementation of desirable curricular and instructional changes. Roles such as these require teachers to learn new information and solve problems in groups (as opposed to doing so individually). Such roles also foster higher levels of commitment and satisfaction if there is a clear organizational focus (Rowan, 1990).

Principals, more so than other faculty members, are in a position to enhance the skills and knowledge of adults in the organization, create a common culture of expectations around the use of those skills and knowledge, and hold the faculty together in a productive relationship while keeping individuals accountable for their contributions to the common goal (Elmore, 2005).

The leadership role of superintendents is similar to that of the school principal in terms of using data to make decisions, establishing common

goals, building capacity through distributed leadership, garnering resources, preventing fragmentation, and modeling expectations. Superintendents assist in crafting a district-wide vision of what is possible and in communicating it clearly to the district staff, board, and community (DuFour, 2002; Fullan et al., 2004).

What is the role of school board members? Administrators will want to keep board members fully informed not only of the goals they wish confirmed, but of the progress being made by students toward attainment of those goals, and why what they are doing has potential for yielding improved student performance. Board members need to regularly request such information because in the eyes of the community, they are leaders in the school districts and are responsible for many of the changes being made or for how federal and state regulations operate in their district.

Elmore (2002), in *Building a New Structure for School Leadership*, outlines five principles for distributed leadership:

1. *The purpose of leadership is the improvement of instructional practice and performance regardless of role.* Therefore, the skills and knowledge that matter are those which bear on the creation of settings for learning focused on clear expectations for instruction.
2. *Instructional improvement requires continuous learning.* Collective learning requires an environment that guides and directs acquisition of new knowledge about instruction. Continuous learning must be viewed as a collective good and leaders must create environments that value shared learning. Privacy of practice must be eliminated.
3. *Learning requires modeling.* Leaders must model the learning behaviors and values and expect others to do so. The importance of leadership, at all levels, cannot be overemphasized for the success of school improvement efforts. The leadership of teachers, principals, and central office staff and school boards working and learning together is critical to the success of schools in accelerating student achievement.
4. *The roles and activities of leadership flow from the expertise required for learning and improvement, not from formal dictates of the institution.* This type of collaboration is born out of the belief that learning grows out of differences in expertise. In other words, all parties share their expertise to advance the collective good and increase the effectiveness of all parties.
5. *The exercise of authority requires reciprocity of accountability and capacity.* Leaders need to assure the people in the organization they have or can acquire the skills necessary to carry out the expected task. The leader also has the responsibility to create opportunities for staff to learn the new knowledge and skill. And in

Elmore's words: "My authority to require you to do something you might not otherwise do depends on my capacity to create the opportunity for you to learn how to do it, and to educate me on the process of learning how to do it, so that I become better at enabling you to do it the next time." (p. 21)

### **Professional Development**

A second organizational factor in accelerating literacy, or any initiative, is effective professional development that is focused on student learning. Professional development should be systemic and include literacy coaches, resource room teachers, teacher librarians, administrators, and classroom teachers. If student achievement through expanding the instructional repertoire of teachers is a goal, then professional development should incorporate theory, demonstration, practice, and ample opportunities for staff to collaborate in planning and studying the implementation of selected instructional practices.

Whoever provides staff development needs to apply good learning theory and build the conditions that support sustained change. For example, a range of individual and cooperative learning strategies need to be used during professional development sessions, including: opportunities for discussion of new ideas, time to practice, choice in the content of lessons to be planned, and modeling from a variety of perspectives. Also, long-term professional development should not be initiated unless there is also a plan to support teachers and administrators between the group work sessions. This plan requires approval of time allocation, the establishment of regular collaborative work for pairs or teachers or collaborative work groups of four, and expectations of the kinds of work that will be engaged in during this time.

Elmore (2002) refers to professional development as being a "collective good" rather than a private individual goal. Organizationally sponsored professional development provides a public collective learning environment and supports the acquisition of new instructional knowledge and skill. Schools with effective professional development have a clear focus on instruction, on student learning, and on expectations for teachers and other faculty members. To be sustainable, time for professional development should be built into the regular school schedule (Biancarosa & Snow, 2004).

Agreeing that professional development must focus on student achievement, Joyce and Showers (2002) identify four conditions which need to be present if staff development is to significantly affect student learning:

1. A community of professionals study together, practice what they have learned in their classrooms, and share their results.
2. The content of staff development is developed around curricular

and instructional strategies selected because they have a high probability of affecting student learning and, just as important, can be learned.

3. The magnitude of change generated is sufficient so that students' gain in knowledge and their skill is observable.
4. The processes of staff development enable educators to develop the skills to implement what they are learning.

Principals who are staff development leaders recognize that the goal of professional development is student achievement. They form and tend leadership teams who help lead the faculty; participate with lead team members in designing purposeful, goal-oriented learning opportunities; and are tenacious in their support of instructional models and strategies until faculty members acquire and use the knowledge and skill practices selected for collective study. They help assess the impact of professional development, not on the basis of the number of offerings or of the initial enthusiasm for the offerings, but on the basis of observable results in teachers and students (DuFour, 2001).

Meaningful learning can be slow and uncertain for teachers, just as it is for students. When teachers begin working with a new instructional practice, part of the challenge for professional development facilitators is to figure out ways of increasing practice in using the new strategies so that teachers can become knowledgeable about them and their effects on students (Adler, 2000). Without extensive practice and understanding of the rationale and moves of the new instructional strategy, little worthwhile change is likely to occur for students or teachers. Studying and supporting implementation on a regular basis is tricky, and some teachers feel that their autonomy is threatened.

Professional development facilitators must work to maintain a balance between respecting individuals and analyzing teaching changes. Respect is necessary for productive learning communities, and leaders of school improvement are only successful if changes occur in teachers' classrooms. Everything addressed earlier is part of the support system for making the interactions between students and teachers, and students and curriculum materials, more productive, but it is only teachers and students who can accelerate student learning.

Since many content area teachers know little about teaching literacy in the content areas or using writing to learn, many secondary teachers will need sustained professional development on promising instructional practices. Various organizational patterns can be used for professional development for content area teachers, from working in disciplinary and interdisciplinary teams to whole faculty work.

Effective professional development begins with collecting and analyzing data in order to determine the area of focus. School and district faculties who collect and analyze data related to student learning, set goals for improved student achievement based on these data, and make decisions about the content of professional development related to stated goals are more likely to get where they want to go. After determining their goals, the school/district must decide who will provide the training and how they will enable participants to develop skill with the new curriculum, instructional strategies, and assessments. Time must be set aside for faculties to come together, and these learning opportunities should be frequent, ongoing, long-term, and interspersed with classroom practice. Time will also be needed for collaborative problem solving. The Iowa Professional Development Model (IPDM) can be used to facilitate such professional development because it focuses on improving student learning and engaging faculties in collective and accountable learning.

### ***Estimates of Hours of Professional Development for 2005–2006***

Using the data from the interviews of 198 teachers, teacher librarians, guidance counselors, and principals in the State of Iowa, the following information was obtained concerning the number of hours of professional development respondents indicated they participated in during the 2005–2006 school year: principals and teacher librarians were evenly distributed across three time categories: less than 30 hours, 31–40 hours, and more than 50 hours. The most frequent response from guidance counselors was “do not know.” The most common response from middle school teachers was less than 30 hours, and for high school teachers was more than 50 hours.

These data ended up being more problematic to interpret than the team’s external consultant had expected because of the variations in what was identified as professional development. For the 2005–2006 school year, 48 of the respondents reported having a reading focus during their professional development sessions, followed by study of the Marzano strategies (#14), and work on school culture and climate (#12), as frequent content emphases.

### **Capacity Building**

A third component necessary for large scale acceleration of adolescent literacy, or any goal area, is capacity building. Simply defined, capacity building is helping professionals (teachers, principals, district office, and AEA personnel) gain the knowledge and skills critical to their work of supporting colleagues and students. It is often said the mark of a successful leader is the number of good leaders left behind when she or he leaves. To build lateral capacity, leaders must connect school personnel within a



district and help them develop ideas, skills, and practices that support the attainment of organizational goals (Fullan et al., 2004).

Elmore (2004) emphasizes that it is impossible to improve student performance without improving the quality of teaching and learning that is occurring in classrooms. To achieve such changes, faculty members need to be actively engaged in acquiring new knowledge and skills focused on teaching and learning. Elmore defines this improvement as increased quality teacher performance over time. He goes on to say that two key ideas lie underneath this model of improvement. The first is improving the instructional core. Professional development that is highly focused on specific content and the pedagogy that goes with it, and is delivered as close as possible to the classrooms and school in which it will be used, is a promising way to improve instructional practice. Second, having a simple, focused, more explicit curriculum is advantageous.

Capacity building requires more than changes in materials, classroom organization, or the addition of specific activities. It includes actions and study that lead to altering teacher beliefs, norms, and pedagogical principles related to curriculum and instruction, principles that are embodied in the way teachers behave when they engage with students (Coburn, 2003). Most importantly, if there are no gains in teacher learning and practice, there will be no gains for students. On the positive side of studying implementation to determine if adult goals are being achieved, such study enables celebrations of progress and reinforces feelings of success in teachers and students.

### **Sustainability**

Lastly, sustainability is another critical organizational factor. Any innovation or change is only successful if it helps stakeholders accomplish their goals and if it can be sustained over time. School faculties who are successful in sustaining the implementation of a reform do so in the face of competing priorities, changing demands, and teacher/administrator turnover. Teachers are better able to sustain a change when structures are in place at several levels to support their doing so, e.g., study of student data and implementation data are regular routines; leadership teams function in gathering information, supporting communication, and providing staff development; and administrators are integrally involved in modeling and supporting the content of the initiative or reform. Communication with other schools or teachers engaged in similar reform is also helpful (Coburn, 2003).

Sustainability also refers to spreading underlying beliefs, norms, and principles across classrooms and schools. According to Coburn (2003), a school's ownership of a reform becomes "internal" when the work of

supporting the reform becomes self-generative: basically, persons at all levels of the district who are responsible for supporting student and staff learning take over the initiative.

### Recommendations

As school and district faculties work to accelerate literacy development in their settings, the ALRDT recommends that they ask the following questions:

1. How is knowledgeable, distributed leadership being built and expanded?
2. Is professional development content carefully selected based on a study of student knowledge and performance in one or more strands of literacy development and a careful study of promising practices?
3. How effectively is the Iowa Professional Development Model being used to structure collective staff development and collaborative work time?
4. If there is a literacy initiative or focus already in place, are there plans for it to continue until students and staff have learned its content? Are both implementation and student effects being continuously studied?

The following are two quotes from documents studied by the ALRDT:

- *“Most important, if there were no gains for teachers, there were no gains for students. Thus, if teachers did not learn what was taught [in the professional development] students did not experience gains in reading performance”* (Kamil, 2003, p. 25).
- *“The study of implementation enables celebrations of progress”* (Joyce, 1992, p. 12).

### Closing Remarks

The work to improve adolescent literacy scores and skills requires more focus, more sustained effort, greater attention to the core processes of instruction, and more resources and support for teachers and students than presently exist in most of Iowa’s secondary schools. However, with distributed leadership, a focused vision for improvement in adolescent literacy, and ongoing professional development, strong instructional innovations can be implemented and sustained in all schools and districts.

What is the district’s vision for good instruction? How does a school or district build and share its focus? How are superintendents, principals, central office personnel, AEA consultants, and current leadership teams’ members building the capacity of colleagues to lead instructional improvements and accelerate student learning? How does a district embed

research-based professional practices into classrooms? These are questions that responsible parties need to discuss as they work to create learning environments for all students and staff.

As Elmore (2000) explains, “*heavy investments in highly targeted professional development* for teachers and principals in the fundamentals of strong classroom instruction” are critical for the success of a school and for improving student performance (pp. 28–29). To increase adolescent literacy achievement, faculties in schools and districts must focus on instruction to improve student achievement, make decisions based on student achievement data, provide ongoing professional development in research-based best practices, stay focused, and realize that everyone has a role to play in improving instruction and student achievement.

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